The Cavendish Lecture

BEING

REMARKS ON THE SURGERY OF THE LARGE INTESTINE.

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MR. PRESIDENT AND GENTLEMEN,—The surgery of the large intestine is chiefly concerned with three diseases—cancer, tuberculous tumours, and those simple inflammatory disorders which are grouped under the not very accurate or appropriate title, "diverticulitis." The merely technical aspects of this interesting subject have undergone notable improvements. Tumours of the large bowel can now be removed more widely, with greater safety, and with a higher degree of permanent success than would have been thought possible a few years ago. But being the possessor of a mind as well as a hand the surgeon is not satisfied with technical excellencies. His very proper desire is to discover those early symptoms by which the presence of disease can be discerned in a stage when the mechanical measures which he has at his command may have an assured prospect of success. It is therefore disappointing to acknowledge that in respect of the colon and its tumours progress in matters of precocious diagnosis is slow. It is still the terminal event, obstruction or the discovery of a tumour, that too often affords the first chance of surgical treatment.

DIAGNOSIS OF TUMOURS OF LARGE INTESTINE.

The symptoms which are aroused by a tumour in the gut depend upon the portion which is involved. The alimentary canal is developed from the fore-, mid-, and hind-guts. The fore-gut receives and prepares the food, the mid-gut digests and absorbs it, the hind-gut stores and expels it. The work of the mid-gut, which extends from the duodenum to the middle (approximately) of the transverse colon, consists in eating and drinking. That part of the mid-gut which becomes the small intestine takes up the solid food, that which becomes the large intestine takes up the fluid. Hunger is appeased by the small bowel, thirst by the large. The retention of water throughout the whole length of the small intestine is necessary to allow of the transit of the solid particles held in suspension, so that the valvulæ conniventes waved to and fro in the current may present first one side and then the other to the stream which feeds them. If fluid were absorbed in the stomach or jejunum the transit of the dried material through the lower coils of the ileum would be difficult and slow. Our whole intestinal system, indeed, would need reconstruction. The contents which reach the cæcum are then fluid and waste products. All the virtue has gone from the solid material because of the devouring properties of the small bowel. It is computed that only 10 per cent. of the fluid taken by the mouth has been absorbed before the cæcum is reached. The liquid remains, to be quickly absorbed by the cæcum, ascending and transverse colon. If a growth arises in the cæcum or ascending colon a little stenosis probably develops speedily. An exaggerated activity of the intestinal walls behind the growth is therefore directed against the fluid contents, which are driven more quickly along the bowel for discharge. It is, I believe, the rule that, in cases of growth in the colonic portion of the mid-gut, diarrhœa is the predominant form of intestinal irregularity, whereas if the growth has its place in the hind-gut constipation is the more marked. There are exceptions, of course, especially when the rectum is involved low down. But there are very few cases of growth on the right side in which constipation is pronounced; and there are still fewer on the left side with true diarrhœa the condition of which complaint is made.

It is rare for patients suffering from a growth in the large intestine to complain of pain; there is more usually a sense of discomfort, of turmoil, of erratic and uneasy movements, with griping, accompanied by the noise of gas and fluid rolling about within the bowel. The borborygmi in the late cases may be very loud, so that they may easily be heard many feet away from the patient. It is a remarkable feature in cases of carcinoma of the colon that the patient is often able to localise the seat of the obstruction. He will describe the accumulation of flatus at a certain point in the intestine where the difficulty seems to lie, and may say also that a trickle of escaping fluid and gas is felt to be followed at once by relief. One is perhaps at first inclined to doubt the patient's power of localising his trouble, but a long acquaintance with cases of this kind convinces me that it is with remarkable frequency that the patient's predictions as to the place of obstruction are verified by the operation.

Alterations in the fæces are usual in all cases. The changes in their consistency have already been referred to, as also the variations in their frequency, according to the site occupied by the growth. There is often a copious discharge of mucus with, or independently of, the passage of a motion. The fæces are said to be covered with slime or the whole of a discharge may consist of nothing but thick mucus. Blood is often present, probably is invariably found if repeated chemical tests for it are used. It is often visible to the naked eye as clots, or strings or patches adherent to the fæces or floating in the fluid discharges. The recognition of blood is an important aid in diagnosis, for in the condition known as "diverticulitis" hæmorrhage, even in the most trivial quantities, is very rare. A free passage of blood had been noticed as the inaugural symptom in three cases in which I resected a growth in the pelvic colon; such cases are analogous to those in which a profuse hæmatemesis is the first declaration made by a gastric carcinoma.

In cases of carcinomatous growth in the ascending colon, and more rarely when the growth invades the cæcum or the first part of the transverse colon, the presence of anæmia may be observed. The anæmia is stealthy in onset, steady in progression, and may often be very pronounced before any other symptoms have attracted attention. In several instances I have known the case to be regarded as one of idiopathic anæmia until a tendency to looseness in the action of the bowels called particular attention to the abdomen. An examination then revealed a tumour lying in front of or below the right kidney. One patient upon whom I operated had been under very skilled care for nine months for "pernicious anæmia." His bloodless condition was extreme, and before I could attempt any operation upon him I was compelled to perform direct transfusion of blood. The radial artery of his elder son was attached to his median basilic vein and blood allowed to flow for 35 minutes, when I was at once able to proceed to the performance of a short-circuiting operation as a prelude to a later excision of the growth. So far as the large intestine is concerned this pronounced anæmia is not to be noticed when other parts than the ascending colon are attacked. I have seen a similar condition in two cases of growth in the ileum, and in one case of growth high in the jejunum; these conditions of cancer of the small intestine, however, are rare. The lesson to be learnt is that in all cases of unexplained anæmia a careful examination of the abdomen is necessary to detect or to negative the existence of a growth in these parts.

Among the methods of examination which lend accuracy to the diagnosis in cases of growth in the colon is that which is conducted by means of X rays after the administration of a bismuth meal or a bismuth enema. If there is any degree of obstruction the accumulation of the metal behind the stricture may be seen as a very black and often sharply delimited shadow, with a rounded end. After the lapse of time thin pellets of bismuth escaping through the stricture may cause small spots or black shadows to be seen; their appearance contrasts strongly with the massive dark accumulation heaped up on the proximal side of the growth. If the growth is in the cæcum or the lower part of the ascending colon a fair degree of narrowing may be present without any retardation of the bismuth being seen; this is the case even when at the operation a moderate degree of dilatation and hypertrophy is found in the cæcum and small intestine.

In many cases, especially when the growth lies on the left side of the abdomen, the injection of a bismuth mixture into

the rectum may give very accurate information as to the site of, and the degree of constriction caused by, a new growth. It is necessary that the emulsion should be thick and injected slowly, for the ordinary saline enema, as we know, passes so rapidly through the large intestine that it may all escape from a typhlotomy opening within a minute or two of its introduction into the rectum. If the bismuth meets with an obstruction in its ascent of the colon, the shadow shows how completely its passage may be arrested.

In the later stages the presence of a tumour together with the plain evidences of a grossly thickened and distended intestine may be discovered. Malignant tumours of the large intestine are not usually of great size; but the heaping up of a hard fæcal material behind the narrowest part, as well as the very thickened condition of the bowel wall, together make a mass which may be recognised on careful palpation. If in such a case the whole abdomen be gently massaged for a few minutes, and the hand then allowed to lie softly upon the abdomen, a great turmoil and much vigour of contraction of the bowel may be felt. Hard coils of greatly agitated intestines are felt to form under the fingers, and then, with a loud gush and gurgle, quietly to disappear. The cæcum especially undergoes great distension, no matter where the growth may lie. Even with obstruction in the sigmoid flexure the cæcum may be stretched to the size of a small ovarian cyst. Owing to incompetence of the ileo-cæcal valve, so considerable a regurgitation of contents may occur, or so high a degree of retardation of their onward flow, as to cause a very perceptible coiling of the over-full ileum. The muscular movements seen in the large and small intestines in cases of stenosis are of course quite different in character. In the small intestine peristaltic movements are plainly witnessed; in the large intestine distension, with marked hardening or stiffening of the wall, is seen and felt.

Carcinoma may invade any part of the large intestine. With the exception of the rectum, the seat of a malignant growth is supposed to be most often at the flexures—the hepatic, the splenic, and that flexure which marks the change from the descending colon to the sigmoid flexure. I doubt the accuracy of the statement. It is in my view quite rare for the exact turn in the bowel to be involved. The growth lies generally one, two, or three inches from the flexures. Indeed, I have never seen a growth developing exactly at the hepatic, and but rarely at the splenic flexure.

"DIVERTICULITIS."

Attention has recently been concentrated upon diseases of the large intestine other than cancer. The mimicries of malignant disease in the colon are remarkable for their accuracy, as I pointed out in a paper in 1906.[1] They are remarkable also for their frequency, a fact which I did not then appreciate. Of the conditions which imitate malignant disease very closely the most interesting is that now known as diverticulitis ("sacculitis" would no doubt be an apter term). When in 1906 I operated for Dr. R. D. Helm, of Carlisle, upon the first case recognised as chronic diverticulitis of the sigmoid flexure in this country, I could not realise that what seemed an exceedingly rare condition was in reality by no means uncommon. The work of Dr. W. J. Mayo and his colleagues in America and of Dr. W. H. Maxwell Telling in England have, however, made it quite certain that the formation of false diverticula in the colon, to a degree sufficient to cause definite symptoms, is by no means rare. Dr. Telling has now collected more than 100 specimens of the various types which the condition may assume, and I have myself operated upon 14 patients in the acute or chronic stage of their disorder in the colon.

False diverticula are found in all parts of the large intestine, from the appendix to the rectum. In the appendix they are frequently present, but are commonly overlooked. I have seen at least 50 very good examples. In the ascending and transverse colons they are rare; the sigmoid flexure is the part most often attacked; in the rectum they are seen with a frequency that is not yet adequately realised, I believe, by any of us. The diverticula are hernial protrusions of the mucosa through gaps in the muscular coat of the bowel, at points which are weakened, probably by the passage of a vessel. As a result of an increased intestinal pressure, which is itself due to constipation, the mucosa is pressed outwards, discovers the weak points in the mural defence, and escapes through them. In a short length of the bowel, say 4 or 6 inches, a great many of these protrusions may be found. As soon as the serosa is reached protective thickenings and some adhesions are formed, until at last the part of the gut involved becomes hard and thickened, and resembles with great precision a carcinomatous tumour in the intestine. Within the little sacculeswhich are formed foreign bodies lodge—hard, stony, gritty concretions, of the kind so commonly seen in the appendix. Owing to these, and to the obstructions and infections for which they are further responsible, secondary changes occur. These have been very fully investigated and described by Dr. Telling. They are chiefly of interest to the surgeon in the following circumstances: (1) When inflammation and perforation result in a localised abscess ("left-sided appendicitis") or in a general peritonitis; (2) when chronic inflammatory changes cause a close mimicry of carcinoma; (3) when fistulæ develop, external or internal; external when an abscess discharges on to the abdominal wall or on to the back, internal when a communication is formed between the colon and the small intestine or the bladder, or both; (4) when carcinoma develops; (5) when, the rectum being the part affected, many ischio-rectal abscesses form, and rectal fistulæ result.

Of all these types I have had personal experience. Many surgeons have now recorded cases of "left-sided appendicitis" in which recurrent attacks of pain at a point exactly symmetrical with McBurney's have been due to diverticula in the sigmoid flexure. Had the pain and the local signs been right-sided the clinical history would have been considered typical of appendicitis.

Of the second type I have had a good deal of experience. I am disposed to doubt whether we shall ever be able to distinguish the real from the feigned carcinoma in the colon by a scrutiny of the history alone. The symptoms in their character, progress, and duration seem precisely similar in the two diseases, with the possible exception of hæmorrhage. I believe that bleeding rarely, perhaps never, occurs in quantity from a non-malignant condition. When false diverticula are formed the ulcerating surface, if there be any—which is unusual—is small and hidden, and hardly likely to be the source of any appreciable quantity of blood. It is, indeed, only after the removal of the mass that its true nature is laid bare. A further proof of this similarity is to be found in the fact that an examination of the specimens of "cancer" on the shelves of many museums has disclosed the benign nature of the disease. The symptoms during life, the mode of death, and the appearance of the tumour removed alike lead to the belief that a growth is malignant which on section is proved to be simple.

In the case of those patients who for months or years pass flatus or fæces through the urethra it is very probable that a fistula exists between the pelvic colon and the bladder. As I pointed out in 1906, such a fistula is almost certainly due to simple rather than malignant causes. This statement was subject at the time to close criticism, but Dr. Telling and many other writers have since confirmed it. In such cases a diverticulum has often made its way directly through the coats of the bladder, or has caused the formation of a thick-walled abscess, which has itself burst into the bladder cavity, or into the bladder as well as on to the surface of the abdomen, resulting in an opening which may discharge both urine and fæces.

The development of cancer in the depths of a diverticulum as a result of protracted irritation has been shown by Mayo to be more frequent than was previously supposed. This holds true not only of the pelvic colon, indeed of all parts of the colon, but of the rectum also.

Lastly, it is interesting to note that in one case of multiple and inveterate fistulæ, opening in all parts of the perineum and ischio-rectal fossæ, I discovered the cause to be a diverticulitis of the rectum. I excised the rectum and found a condition precisely similar to that with which we are now so familiar in the sigmoid flexure. It may be, as C. H. Mayo has suggested, that many of the most rebellious forms of rectal fistulæ own this origin.

THE OPERATIVE TREATMENT OF MALIGNANT GROWTHS OF THE COLON.

If a malignant growth of the large intestine be removable the scope of the operation to be practised will depend upon a consideration of several factors. The chief of these are:

[1] Transactions of the Clinical Society, vol. xl., 1906.

(1) The pathological anatomy of growths in this portion of the gut; (2) the vascular distribution in the bowel; and (3) the lymphatic distribution.

1. *Pathological Anatomy.*

The pathological anatomy of growths in the colon has been elaborately studied by Okinczyc, under the auspices, and with the encouragement, of his master Hartmann. The work of these two authors gives the most excellent account yet published of the surgery of the intestine.[2] It is now known that cancer of the large intestine is to be considered among the least virulent of malignant growths, for the development of the tumour is usually very slow, the invasion of the lymphatic area appears to be for some time delayed, metastatic generalisation is rarely to be found, and then only, as a rule, in very advanced cases. The growth itself, when examined after removal during life or on post-mortem examination, frequently shows not a fierce activity of cellular proliferation, but rather a remarkably constant tendency to mucoid degeneration. Though these are the rules exceptions to all of them may occur, for a growth may be rapid or a secondary invasion of the liver may be discovered while yet the primary growth is small and easily amenable to removal. Within the last 12 months I have operated upon three cases in which the secondary deposits in the liver were large, while the ring-like primary stricture of the sigmoid flexure was small and to all appearances had caused no involvement of the immediate glands. In these cases, no doubt, the extension of the disease had occurred along the radicles of the portal vein, either by a direct invasion and thrombosis of a sigmoid vein (of which condition I possess two specimens) or by a lymphatic vessel communicating directly with a vein in the manner which Leaf has demonstrated.[3] Mr. H. S. Clogg[4] points out, in a paper to which subsequent references will frequently be made, that "cancer of the colon is in many cases a local disease, and that secondary visceral deposits are not the great barrier to any radical operation." In 41 cases of cancer of the colon causing death there were only six in which visceral deposits could be found. Haussmann[5] gave the following table showing the results of 112 necropsies on cases of carcinoma of the colon:—

In 21	cases	the disease had become generalised.
,, 36	,,	neighbouring lymphatic glands were involved.
,, 35	,,	disease was limited to the gut (there was no special note as to the state of the retroperitoneal glands).
,, 20	,,	disease was absolutely limited to the gut without any doubt.

It is rare to find in cases of carcinoma of the colon that any large extent of the bowel is involved. The growth appears to be small and strictly, even abruptly, limited. But Sampson Handley[6] has offered some evidence to show that permeation of the lymphatics occurs wide of the disease; in one case of early cancer of the rectum, cells, apparently carcinomatous, were found at the extremity of the specimen removed, about 6 inches above the growth. Adhesions of the growth to the posterior abdominal wall or to other parts of the intestinal canal are sometimes encountered, and may, though rarely, prohibit any attempt at removal. I have twice been prevented from removing a growth in the ascending colon by reason of deep and extensive invasion of the abdominal wall. It is, however, chiefly at or near the hepatic and splenic flexures that the parietal attachments of the growth are closest. In the case of the sigmoid flexure it is not very uncommon to find the small intestine so adherent as to make it necessary to remove a segment of this also. In one case I found the transverse colon adherent, and I was accordingly compelled to remove the bowel from the hepatic flexure to the lowest part of the sigmoid. I turned the hepatic flexure downwards and performed a side-to-side anastomosis with the sigmoid flexure with a perfectly satisfactory result.

We are, I think, entitled to believe that a carcinomatous growth of the colon by reason of its small size, its (apparently) abrupt delimitations, its lengthy restriction to the intestinal wall, the tardy appearance of metastatic deposits, and the paucity of the lymph-glandular supply should prove amenable to successful attack by the surgeon. It would appear to be true to say that if cancer is to develop in the body there are few places it could select with so happy a chance for the patient of ultimate and complete relief as the large intestine.

2. *Vascular Distribution.*

It is important to know the vascular distribution in the colon, for it is alongside the arteries that the lymph currents flow and the the lymph glands chiefly lie. The large intestine is supplied by branches of the superior mesenteric artery and by the inferior mesenteric artery. The ileo-colic artery, which appears to continue in the direct line of the main trunk of the superior mesenteric artery, supplies the last few inches (about 6) of the ileum, the cæcum, and a part of the ascending colon. It takes origin at or near the level of the third part of the duodenum, and descends, inclining to the right, to reach the ileo-colic angle. From its right side as it descends the right colic artery is, as a rule, given off, though this vessel may arise directly from the superior mesenteric trunk. As the artery approaches the ileo-colic angle it divides. The mode of its division varies, but, as a rule, the artery to the appendix is first detached and the remaining trunk divides into anterior and posterior ileo-colic arteries; the anterior ileo-colic gives off a branch to the ileum, the posterior a branch to the cæcum.

The middle colic arises near the lower border of the pancreas and directs its course towards the right in the layers of the transverse mesocolon, where it divides into branches, each of which again divides, to form a series of arches joining on the mesial side of the ascending colon with the right colic, and towards the splenic end of the transverse colon terminating in an anastomosis ("anastomosis magna" of Riolan) with the ascending branch of the left colic artery. Not infrequently an accessory middle colic artery (Waldeyer) is given off as the first branch of the superior mesenteric artery to run direct towards the middle of the transverse colon.

The inferior mesenteric artery springs from the front of the aorta about the level of second and third lumbar vertebræ, slightly below the lower border of the duodenum; it is directed to the left and then downwards and gives off the left colic artery at the level of the division of the aorta. The left colic is a short, thick vessel which soon divides into two branches, an ascending, which mounts towards the left end of the transverse mesocolon where it anastomoses on the one side with the middle colic, as already described, and on the other with its own descending branch, which, for its part, joins with the first sigmoid artery in the usual arching anastomosis. The sigmoid arteries, one to four in number, arise directly from the inferior mesenteric artery, and radiating outwards and downwards in the mesosigmoid divide each into an ascending and descending branch; those anastomosing with their neighbours form a series of arches, from the curved side of which branches are given off, sometimes to form secondary arches, sometimes to run direct to the intestinal wall. The anastomoses of the branches of the left colic and sigmoid arteries result usually in the formation of a single uninterrupted "marginal artery" which extends from the splenic flexure to the lowest part of the sigmoid flexure. Here, however, it stops, for the superior hæmorrhoidal artery, which is the continuation of the inferior mesenteric trunk after the sigmoid arteries have left, does not divide into two arch-forming branches, but runs directly to the intestinal wall. The great importance of this fact has been demonstrated by Sudeck[7] and by Manasse,[8] from whose articles many of the foregoing details have been taken.[9] A reference to the figures given by these authors will show that if the lowest sigmoid artery and the superior hæmorrhoidal artery be separately ligatured the circulation through the marginal artery will be destroyed and gangrene may follow in the part of the bowel supplied by these two vessels. If, however, a ligature be applied to the trunk of the inferior mesenteric artery anywhere above the margin of the last sigmoid artery this vessel will be able to convey blood arriving in the marginal artery into the superior hæmorrhoidal trunk. The point of junction between the superior hæmorrhoidal artery and the lowest sigmoid artery is therefore called by Sudeck the "critical point." Ligature of the

[2] Travaux de Chirurgie, troisième série, Chirurgie de l'Intestin, Paris, 1907, G. Steinheil.
[3] Surgical Anatomy of the Lymphatic Glands, 1898.
[4] THE LANCET, 1908, vol. ii., p. 1007.
[5] Thèse de Paris, 1882.
[6] Brit. Med. Jour., 1910, vol. i., p. 927, pp. 1378-9.
[7] Münchener Medicinische Wochenschrift, 1907, Band liv., p. 1314.
[8] Archiv für Klinische Chirurgie, 1907, Band lxxxiii., p. 1003.
[9] See also Waldeyer: Die Arteriæ Colicæ, Berlin, 1900.

superior hæmorrhoidal artery and the lowest sigmoid artery below the critical point would appear inevitably to result in gangrene of the portion of the rectum supplied by them. There is, however, a far more valuable mode of investigation, which can be conducted by the surgeon while he is at work upon a case. My own view is that, however vessels are ligatured and whatever sacrifice of mesentery may be thought necessary, it is almost impossible to deprive the cut ends of the colon, when resection is being done, of an adequate blood-supply. Mortification due to anæmia is a myth. The marginal artery affords an ample supply of blood to all parts.

The importance of this marginal artery in so far as the procedure of intestinal resection is concerned cannot be overestimated. Its importance has received especial emphasis in an excellent paper by Archibald of Montreal,[10] who demonstrates from post-mortem investigation and from experiments upon animals that the supply of blood passing along this trunk from the anastomosis with the middle colic artery is ample to maintain the vitality of the whole of the descending colon and the sigmoid flexure after the inferior mesenteric artery has been ligatured at its origin.[11]

3. *The Lymphatic Distribution.*

A knowledge of the number, course, and termination of the lymphatic vessels and of the distribution of the lymphatic glands is essential to all sound surgery of malignant disease. The surgery of carcinoma may sometimes be the surgical anatomy of the lymphatic system. If a growth affects any organ it is necessary to know the boundaries of the lymphatic area of that part; to know, that is, the origin, the course, and the destiny of all the lymph-vessels which drain the part that is affected.

During the last few years, as a result of the discovery of a method of injecting the lymph-vessels by Gerota, a great deal of investigation has been carried out by many workers, chief among whom in this connexion are Clado,[12] Polya and von Navratil,[13] Cunéo,[14] and Jamieson and Dobson.[15]

All, or almost all, of the investigations by these several observers were carried out upon the fœtus. In the fœtus and young child the lymph supply is free, and the number of glands appears to be relatively smaller than in the adult. As age advances changes everywhere take place in the lymphatic system, as C. H. Mayo and Polya and von Navratil have shown, and probably these changes are, to say the least, as considerable in the large intestine as in any part of the body. They consist in the obliteration of vessels by quiescent inflammatory processes, or by a simple process of involution, and by the interruption of the long vessels of the fœtus by the development of a gland or glands in their path. Moreover, we learn nothing from all these observations of the one supremely important thing in connexion with the spread of carcinoma—that is, the change in the direction of the flow of the lymph when one channel becomes blocked. So long as all channels remain open the lymph flow seems destined always to take a definite direction, but in malignant disease cancer cells are carried away in the lymph stream, and may soon form an embolus in any vessel within which they lie. That path is then closed, but the flow from the growth continues. As to the direction it may then take we are given no evidence.

All these various points make it certain that, great though our interest in the lymphatic system of the fœtus may be, we must not let our surgical procedures be too strictly dependent upon a knowledge of it. The plan of the lymphatic areas of the fœtus does not show us the direction taken, the vessels traversed and the glands involved, when cancer attacks any part and cancer cells are set free, but it indicates rather the very worst that could conceivably happen if the entire lymph system had remained unaltered from birth and if every channel remained patent. One very important result, as it appears to me, has come from the exaggerated importance attached to this recent work upon the lymphatic system. The best energies of the surgeon have been deflected from his main duty, the free removal of the growth, to what is after all of secondary value, the extirpation of the lymphatic area. The most perfect dissection of the lymph territory, its vessels and its glands, is desirable when possible, but the removal of the growth itself, often very perfunctorily performed, is the supreme essential. The method of inquiry which would give the most helpful results would seem to be the investigation of the bodies of patients who have died from malignant disease, and the examination of specimens removed by operation. The latter method cannot, of course, be so satisfactory as the former, for even should the patient be completely and permanently relieved of the disease there is no proof that every cancer cell or every gland involved has been taken away.

In the case of the colon a most excellent beginning has been made in this inquiry. Mr. H. S. Clogg reports in a most valuable paper[16] the result of an examination of 72 cases of cancer of the large intestine; he indicates the glands affected, and gives an outline of the various operative procedures necessary in the different parts of the colon. He divides the colon for purposes of description into its several arterial segments. Also, the workers I have already named agree in placing the lymphatic glands along the lines of the larger arteries.

1. *The glands along the ileo-colic artery.*—Along the whole length of the ileo-colic artery some lymphatic glands lie. Though they form an almost continuous chain they are roughly divided by Jamieson and Dobson into a lower and an upper group, the former lying around the point of division of the artery, the latter on and below the duodenum. The vessels from the appendix consist of three sets. One, drawing from all except the root, ascends between the layers of the meso-appendix with the branches of the appendicular artery to the glands of the lower ileo-colic group, a few vessels ascending to the upper group. Those from the root of the appendix are anterior and posterior; the anterior passing upwards escape past the anterior ileo-colic glands to reach the lower main ileo-colic group—a vessel or vessels may pass these also to reach the upper group; the posterior vessels end in the posterior ileo-colic group.

The vessels from the point of the cæcum run with, and terminate in the same glands as, those of the appendix root.

The point of greatest importance in the lymphatic arrangement of the cæcum and appendix is that, as Polya and von Navratil first showed, vessels may pass from their origin directly to the upper group of the main ileo-colic chain. The importance of this observation is, of course, this, that it seems to indicate that in any "radical" operation for the removal of carcinoma of the cæcum or appendix the highest glands along the ileo-colic artery must be included as well as the lower group, and those subsidiary groups which lie along the branches given off to right and left at the termination of the artery. Clogg in his paper reports on the examination of 16 cases—14 post-mortem specimens and 2 specimens obtained by operation. In only three-fourths of the cases were the enlarged glands infected. These were found in four groups—(1) in the ileo-colic angle generally close to the intestine, but occasionally extending a little distance upwards, in

[10] Journal of American Medical Association, 1908, vol. i., p. 573.
[11] See also Morestin, Bulletin de la Société de Anatomie, Paris, 1903, and Hartmann, Annals of Surgery, 1910, vol. l., p. 1091.
[12] Comptes Rendus de la Société de Biologie, 1892, vol. iv., p. 142.
[13] Deutsche Zeitschrift für Chirurgie, 1903, vol. lxix., p. 421.
[14] Traité d'Anatomie Humaine, par Poirier et Charpy, 1902.
[15] THE LANCET, 1907, vol. i., p. 1137; Annals of Surgery, 1909, vol. l., p. 1077.
[16] THE LANCET, 1908, vol. ii., p. 1007.

DESCRIPTIONS OF ILLUSTRATIONS.

FIG. 1.—Annular stricture caused by diverticulitis. A glass rod is seen in one diverticulum. (Dr. Maxwell Telling's collection.)

FIG. 2.—Diverticulitis of sigmoid. A diverticulum has perforated, and has caused an abscess which lies between the bowel and the bladder. The abscess, seen in dark shadow, has perforated into the bladder. The internal orifice of the urethra is seen at the upper part of the figure. (Dr. Maxwell Telling's collection.)

FIG. 3.—Multiple diverticula; dissected specimen. The pouches which are formed by the diverticula are well seen. (Dr. Maxwell Telling's collection.)

FIG. 4.—Carcinoma of transverse colon, gastro-colic fistula. The transverse colon and a part of the stomach were successfully removed. A rod lies in the track of the fistula.

FIG. 5.—Part of the ileum, the ascending and a portion of the transverse colon removed for two separate growths, one in the ascending colon and one in the transverse colon. The healthy part of the bowel between the two growths shows a simple pedunculated tumour.

FIG. 6.—Chronic diverticulitis of the sigmoid flexure. An abscess formed, burst externally, and gave rise to a fæcal fistula. The diverticular pits are well shown. A glass rod is in the fistula.

FIG. 1.

FIG. 2.

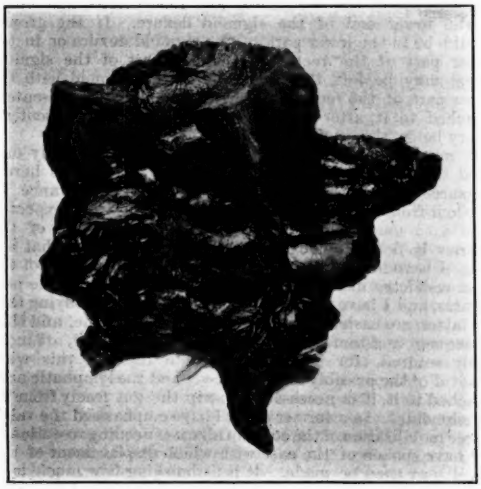


FIG. 3.

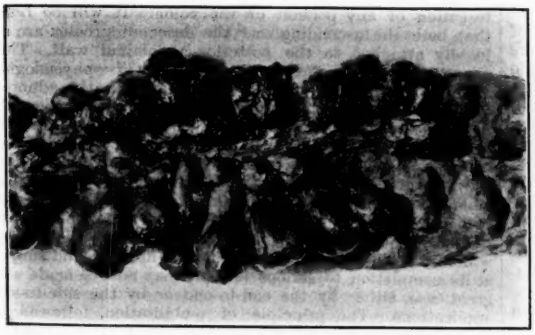


FIG. 4.

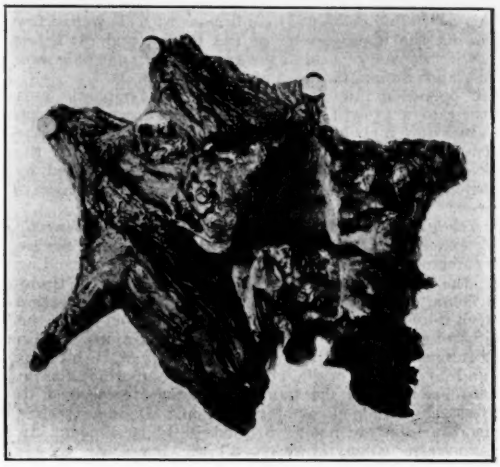
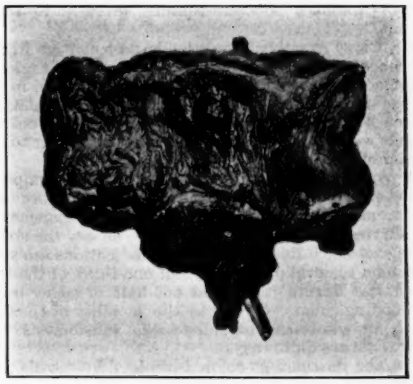


FIG. 5.

FIG. 6.



three only as high as the origin of the right colic artery; (2) continuous with these were glands along the inner side of this ascending colon; (3) continuous with (1) were a few glands on the upper border of the ileum; and (4) a few glands in two cases "behind the growth." In one only were there glands around the head of the pancreas.

The operation intended to remove the lymphatic area attached to a growth of the cæcum and ascending colon must therefore include the last six inches of the ileum, the cæcum, the ascending colon, and about one-third of the transverse colon. This is the operation first described by Friedrich, and the one which in recent years I have always adopted.

2. *The lymphatic system in connexion with the middle colic artery* extends from the hepatic almost to the splenic flexure and embraces therefore a small portion of the ascending colon, the hepatic flexure, and about two-thirds of the transverse colon. Glands lie along the margin of the intestine between it and the series of vascular arches from which the straight vessels to the bowel are derived. Groups lie also along the main trunk of the vessel, especially at its bifurcation and its point of origin. This last group which lies on the vessel as it enters the transverse mesocolon received, in the fœtuses examined by Jamieson and Dobson, vessels "from the intestine itself" 5 times in 14 specimens. In the transverse colon, however, all the lymphatic vessels are interrupted by glands lying close to the gut; none escape to enter the main group on the origin of the artery.

The number of specimens examined by Mr. Clogg was too small to be more than suggestive of the route followed in the lymphatic invasion by cancer cells. It would appear that in the case of a growth in the hepatic flexure the glands not only in the immediate vicinity of the tumour are involved, but also those which lie along the undivided trunk of the middle colic artery. This vessel, therefore, must be tied close to its origin, which will involve a removal of about one-half of the transverse colon, the hepatic flexure, and a part of the ascending colon; but for ease of subsequent anastomosis it is better to tie also the ileo-colic and the right colic arteries, as in cancer of the cæcum, so that the ileum may be readily brought over to the transverse colon. The operation of Friedrich, that is to say, is performed with the addition of the ligature of the main trunk, instead of a branch, of the middle colic, and a rather longer piece of the transverse colon is excised. If the growth be in the transverse colon it is only necessary, in accord with the fact that the lymph channels are almost at once arrested and never pass direct to the main group, to excise widely, three inches approximately on each side of the growth, and to take away the attached portion of the mesocolon with its contained glands. The vascular supply on each side of the line of section is well secured and an easy end-to-end or side-to-side anastomosis can be performed.

3. *The lymphatic system in connexion with the inferior mesenteric artery* extends from the left end of the transverse colon to the rectum.

(*a*) The splenic flexure, supplied by the left colic artery, is drained by vessels which speedily encounter lymphatic glands. Jamieson and Dobson have "never seen a vessel passing directly to the main group of glands lying on the left colic artery," but they draw attention to a vessel which may "sometimes be seen running directly to the splenic glands."

Mr. Clogg examined the glands post mortem in 6 cases of cancer of the splenic flexure. "In 5 cases glands were enlarged in the vicinity of the primary growth, in the angle of the flexure or a little posterior to it in relation to the spleen or to the inner side of the descending colon. In 3, glands were also present in the mesocolon near to the lower border of the proximal transverse colon."

An operation destined to remove the whole lymphatic area attached to the splenic flexure would therefore appear to be impracticable, in view of the possible engagement in it of glands in the hilum of the spleen, unless the spleen itself were excised. But probably the indications are sufficiently met by a removal of a part, about one-third, of the transverse colon, the flexure itself, and one-half or rather more of the descending colon. Owing to the mobility of the transverse colon an end-to-end or side-to-side anastomosis is, I have found, always quite easy.

(*b*) The descending colon is drained by vessels which end in the group of glands lying to the inner side of the gut, and along the trunk of the left colic artery and its two branches. In the fœtus vessels also go, according to Jamieson and Dobson, towards the hilum of the spleen.

(*c*) The sigmoid flexure and the rectum are drained by vessels which are tributaries to glands of the inferior mesenteric chain. Along the whole length of this vessel glands are found in some cases, but not above the origin of the left colic artery in all.

Clogg records 18 cases in which post-mortem investigation was made of the glands in cases of growths in the sigmoid. In 17 of the 18 cases enlarged glands were present. "In every instance they were found in close proximity to the primary growth. In 6, glands were found at some distance from the primary growth near to or at the base of the mesentery." The extent of the glandular enlargement varied in these 6 cases; in 3 the highest gland was well below the origin of the first sigmoid artery, in 3, glands were higher up on the main trunk of the inferior mesenteric artery. In only two-thirds of the cases were cancer cells found in the glands. Clogg points out that cancer in this region remains for long a local disease, that all glands seen to be enlarged are not necessarily cancerous, and that in no single instance was glandular involvement only a barrier to radical operation.

An operation to remove the whole lymphatic area involved in a growth in or near the middle of the sigmoid flexure would involve the ligature of the inferior mesenteric artery below the level of the left colic artery (or if glands are felt above this the artery may be ligatured at its origin from the aorta without fear of gangrene; that at least has been my frequent experience) and the division of the bowel above at the junction of the descending and iliac colons, and below at the lower end of the sigmoid flexure. If the growth should be in the lower part of the sigmoid flexure or in the upper part of the rectum the upper part of the sigmoid bowel may be left, the remainder of the sigmoid with the upper part of the rectum being removed with the mesentery attached to it, after the ligation of the inferior mesenteric artery below the origin of its left colic branch.

It may be urged against the operations thus briefly outlined that they are needlessly extensive, that less heroic measures have in the past given no little assurance of freedom from recurrence, and that the gain to be expected from a so much wider removal with high ligature of the arteries is not commensurate with the extra risks that are run. I have had a fairly considerable experience both of the older restricted methods and of the newer, more ample procedures, and I have not the smallest hesitation in saying that the latter are easier to perform, more quickly done, and that subsequent anastomoses, if they are to be attempted, are more easily secured, for in order to make feasible this wide removal of the possibly infected bowel and the lymphatic area attached to it, it is necessary to strip the gut freely from its attachments. In a former paper I have emphasised the value of free mobilisation of the colon in all cases needing resection,[17] and have spoken of the ease with which displacement of the bowel may then be made. It is astonishing how much may be done by these manœuvres; in one recent case I was able without real difficulty to attach the bowel about 2 inches below the splenic flexure to the rectum. The simplicity conferred upon the operation by this preliminary liberation of the attachment is the keynote of the whole procedure in resection of any portion of the colon. It will be found that both the ascending and the descending colon are but loosely attached to the posterior abdominal wall. Their connexions with it are due to the process of "physiological fusion" described by Toldt; to dissociate the adherent intestine from its attachment and thus to *reproduce the fœtal condition* is simple. The ascending colon and the descending colon, after incising the serosa on their outer sides, may be stripped quite up to the middle line; they remain attached then simply by a mesenteric leaf, which contains the vessels running to supply them; after being freed in this manner they may easily be displaced and brought to lie loosely in new positions, and so an anastomosis which in ordinary conditions would be difficult and subject at its completion to serious tension may now be made with great ease, either by the end-to-end or by the side-to-side applications. The principle of mobilisation, followed by transplantation or displacement, to which I called attention

[17] Surgery, Gynæcology, and Obstetrics, 1908, vol. i., p. 463.

in a paper referred to above, was soon afterwards rediscovered and elaborated in so far as it applies to the sigmoid flexure and the descending colon by Cavaillor and Chalier.[18] The principle applies equally to the operation upon the right side. When carried out thoroughly it results in the colon having as great freedom of movement as the small intestine.

The choice between the two methods of anastomosis—side-to-side or end-to-end—has exercised the minds of surgeons for some years. There are advantages in both. If the peritoneal investments are complete in both ends to be united, then end-to-end anastomosis seems to me an excellent method. It is, however, far more difficult to do with accuracy, neatness, and precision; if done in a slipshod manner disaster is bound to follow, leakage will occur from the suture line, and a general peritoneal infection or a localised abscess will be the result. If the serous covering is incomplete in one or other segment of the bowel, then I think it more prudent to close the two outends and to approximate their serous surfaces in a side-to-side anastomosis, which should always be of ample size. Healing in such an attachment occurs readily, and the union is sound and firm within a few hours. It has been supposed, and the supposition receives undoubted support from experimental observation, that an end-to-end anastomosis allows a more easy onward progression of the intestinal contents. It may be so, but I have never seen any difficulty arise in my own cases when the anastomosis has been made laterally. And as Dr. W. J. Mayo, whose experience is unrivalled, points out, the side-to-side anastomosis seen a few months after its formation differs from the end-to-end very slightly in appearance; a small elbow alone marks the point at which the junction has been made.[19]

THE KINETIC THEORY OF SHOCK AND ITS PREVENTION THROUGH ANOCI-ASSOCIATION (SHOCKLESS OPERATION).

BY GEORGE W. CRILE, M.D.

Introduction.

WHEN a barefoot boy steps on a sharp stone there is an immediate discharge of nervous energy in his effort to escape from the wounding stone. This is not a voluntary act. It is not due to his own personal experience (i.e., his ontogeny), but is due to the experience of his progenitors during the vast periods of time required for the evolution of the species to which he belongs—i.e., his phylogeny. The wounding stone made an impression upon the nerve receptors in the foot similar to the innumerable injuries which gave origin to this nerve mechanism itself during the boy's vast phylogenetic or ancestral experience. The stone supplied the phylogenetic association, and the appropriate discharge of nervous energy automatically followed. If the stone be only lightly applied there is a discharge of nervous energy from the sensation of tickling, but if the sole of the foot is repeatedly bruised or crushed by the stone shock may be produced. The body has had implanted within it other similar mechanisms of ancestral or phylogenetic origin, the purpose of which is the discharge of energy for the good of the individual.

According to my kinetic theory of shock it is one of these mechanisms—the motor mechanism in particular—which, through its phylogenetic association with injury of the individual, is responsible for the discharge of energy represented by shock. According to this theory, the essential lesions of shock are in the brain cells, and are caused by the conversion of potential energy in the brain cells into kinetic energy at the expense of certain chemical compounds stored in the cells.

There is strong evidence that animals capable of being shocked are animals whose self preservation originally depended upon some form of motor activity. In man and other animals this motor activity expressed itself in running and fighting; hence the motor mechanism comprises the muscles and all the organs that contribute to their activity.

[18] Lyon Chirurgical, 1908, vol. i., p. 379.
[19] Annals of Surgery, 1910, vol. l., p. 200.

Motor activity is excited by the adequate stimulation of the nerve ceptors, both of the *contact* ceptors in the skin and in other tissues, and of the *distance* ceptors or special senses. I assume that stimulation of the distance ceptors (special senses) is as potent as stimulation of the contact ceptors in producing a discharge of energy. I assume, further, that the environment of the past (phylogeny), through the experience of adaptation to environment, predetermines the environmental reactions of the present. In each individual at a given time there is a limited amount of potential energy stored in the brain cells. Motor activity, expressed as action or emotion, following upon each stimulus, whether traumatic or psychic, diminishes by so much the amount of potential energy left in the brain cells. Stimuli of sufficient number or intensity inevitably cause exhaustion or death. If this motor activity, resulting from response to stimuli, takes the form of obvious work performed, such as running, the phenomena expressing the depletion of the vital force are termed *physical exhaustion*. If the expenditure of vital force is due to traumatic or to psychic stimuli which lead to no obvious work performed, especially if the stimuli are strong and the expenditure of energy is rapid—the condition is designated "shock." Shock may, of course, be produced by physical injury without anæsthesia. The first question then is:

Does Inhalation Anæsthesia Prevent Shock?

The word anæsthesia—meaning without feeling—describes accurately the effect of inhalation anæsthetics. Although no pain is felt in operations under inhalation anæsthesia, the nerve impulses set up by a surgical operation reach the brain. We know that not every portion of the brain is fully anæsthetised, since surgical anæsthesia does not kill. The question then is, What effect has trauma under surgical anæsthesia upon that portion of the brain that remains awake? If in surgical anæsthesia the traumatic impulses of operation cause an excitation of the wide-awake cells, are the remainder of the cells of the brain, despite anæsthesia, influenced in any way? If influenced, they are at least prevented by anæsthesia from expression through conscious perceptions or muscular action.

We determined whether or not the "anæsthetised" cells are influenced by trauma under inhalation anæsthesia by noting in patients the physiological functions after recovery from anæsthesia and by examining the brain cells of animals which had been subjected to shock-producing trauma. It has long been known that the vaso-motor, the cardiac, and the respiratory centres discharge energy in response to traumatic stimuli applied to various sensitive regions of the body during surgical anæsthesia. Our experiments have shown that if the trauma is sufficient, exhaustion of the entire brain may be observed after the effects of anæsthesia have disappeared; that is to say, despite the complete paralysis of voluntary motion and the loss of consciousness due to inhalation anæsthesia, the traumatic impulses do reach and influence every other portion of the brain. We observed also that in every instance the changes in the brain cells of the cortex and of the cerebellum were more marked than in those of the medulla and the cord. (Fig. 2.)

There is also strong negative evidence that traumatic impulses are not excluded by ether anæsthesia from that part of the brain that is apparently asleep. For if the factor of fear be excluded, and if in addition traumatic impulses are prevented from reaching the brain by blocking the nerve trunks by local anæsthesia, then, despite the intensity or the duration of the trauma, within the zone so blocked no exhaustion follows after the effect of the anæsthetic disappears, and no morphologic changes are noted in the brain cells. Still further negative evidence that inhalation anæsthesia offers to the brain cells little or no protection from trauma is derived from the following experiments. Dogs whose spinal cords have been divided at the level of the first dorsal segment and that have then been kept in good condition for two months show a recovery of the spinal reflexes, such as the scratch reflex. Animals so treated are known as "spinal dogs." Now in a "spinal dog" the abdomen and the hind extremities have no direct nerve connexion with the brain. For four hours at a time we submitted such dogs to a continuous severe trauma of the abdominal viscera and of the hind extremities. There resulted but slight change in either the circulation or the respiration, and no microscopical alteration of the brain cells

was noted. (Fig. 3.) Judging from a large number of experiments on normal dogs under ether, such an amount of trauma would have caused, not only a complete physical exhaustion, but also a morphologic alteration of all the brain cells and the physical destruction of many; indeed, it would quite surely have killed the animal. We must, therefore, conclude that, although ether anæsthesia produces unconsciousness, it is in reality only a veneer, as it protects none of the brain cells against exhaustion from the trauma of surgical operations.

The Cause of the Exhaustion of the Brain Cells from Trauma of Various Parts of the Body under Inhalation Anæsthesia.

First, Are the brain cell changes due to anæsthetics *per se?* Numerous experiments on animals to determine the effect of ether anæsthesia *per se*—that is, ether anæsthesia without trauma—showed neither the characteristic physiologic exhaustion after the anæsthesia had worn off nor characteristic changes in the brain cells. Observation of the behaviour of individuals under deep and under light anæsthesia during physical injury at once gave the cue to the cause of the discharge of energy, the consequent physiologic exhaustion, and the morphologic changes in the brain cells. Under surgical anæsthesia, if rough handling of sensitive tissues is made, there is observed usually a marked increase in the respiratory rate and an alteration in blood pressure. Under light anæsthesia severe manipulation of the peritoneum often causes such vigorous contractions of the abdominal muscles that the operator may be greatly hindered in his work. Muscular response to trauma under inhalation anæsthesia may be only purposeless moving, but if the anæsthesia is sufficiently light and the trauma is sufficiently strong, movements, unmistakably purposive, may be produced. To injury under inhalation anæsthesia every grade of response may be seen, varying from the slightest change in the respiration or change in the blood pressure to a vigorous defensive struggle. As to the purpose of these subconscious movements there can be no doubt—*they are efforts to escape from injury.* The respiratory centres and the circulatory centres are doing their part in crying out—in trying to escape. So, too, all the rest of the brain cells are doing their part in crying out, in trying to escape, but because of the anæsthetic paralysis the voluntary muscles cannot express themselves. Were it not for the muscular paralysis the patient's face would without doubt express motor activity as strongly as in the accompanying picture of the athlete (Fig. 4) whose motor mechanism is driven by voluntary impulses only. The motor mechanism of a patient under inhalation anæsthesia may be driven even more powerfully, though in silence, throughout the course of a surgical operation.

The result is the same as it would be if a major surgical operation were to be performed under curare alone. Curare completely paralyses all voluntary muscles, but produces no anæsthesia. It gives, therefore, complete muscular relaxation—a dead paralysis that would satisfy the roughest surgeon. During such an operation there would be absolute stillness, but after the paralysing effect of the curare had worn off and the patient had become again able to express himself what would he say? What would the surgeon think? Yet this is just the punishment the surgeon inflicts daily on the subconscious brain, and this explains why a patient in the flood of health and with composed face may emerge broken and shattered and with the facies of the tortured from a severe, perhaps rough, operation under inhalation anæsthesia.

If the trauma under inhalation anæsthesia be sufficiently strong and if it be repeated with sufficient frequency, the brain cells will finally be deprived of so much of their potential energy that they will become exhausted. The resulting exhaustion is the same as that which follows a strenuous and too prolonged muscular exertion, such, for example, as running a Marathon. (Fig. 4.) Whether the nerve energy of the brain is discharged by injury under anæsthesia, by normal physical exertion, or by emotion, identical morphologic changes are seen in the brain cells. The impairment of function in shock from injury, in exhaustion from overwork, and in exhaustion from pure fear is the same. In each a certain length of time is required to effect recovery, and in each morphologic changes in the brain cells are produced. (Compare Fig. 3 and Fig. 10.)

The next questions are these: Is shock produced with equal facility under ether and under nitrous oxide? and What effect has local anæsthesia?

The Anæsthetic Factor in Shock.

Assuming that the morphologic changes in the brain cells are due to the fact that nervous energy is produced by the conversion of certain chemical compounds in the brain cells into simpler compounds, and that this conversion of potential energy into kinetic energy is due to oxidation, then one would expect to find that a given amount of trauma under an anæsthetic like nitrous oxide would produce less change than an equal amount of trauma in an animal under ether; for nitrous oxide, more than ether, owes its anæsthetic property to its interference with the use of oxygen by the brain cells. Testing this point experimentally, we found that under approximately equal trauma the changes in the brain cells were approximately three times as great under ether anæsthesia as under nitrous oxide anæsthesia; that the fall in the blood pressure was on the average two and a half times greater under ether than under nitrous oxide (Fig. 5); and finally, that the condition of the animal was better after trauma under nitrous oxide than after equal trauma under ether. In the course of operations on the human body one observes constantly the same protective effect of nitrous oxide. This, however, is what one should expect if the kinetic theory of shock is true. Then, too, the mere excitation due to the feeling of suffocation while inhaling ether causes a certain amount of exhaustion. On the kinetic theory no shock could be produced by traumatising a territory infiltrated with local anæsthetics—a territory whose nerve connexion with the brain has been broken by nerve blocking, thus reproducing the condition of a "spinal" dog whose cord has been divided in the upper dorsal region. Our experiments showed that neither brain cell changes nor physical exhaustion were produced by any trauma, however severe or prolonged, inflicted upon a "blocked" territory. We concluded, therefore, that the traumatic impulses must reach the brain to cause shock. (See Fig. 3.)

We have not yet shown, however, that the brain cell changes are not due to some secondary factor, such as internal secretions, altered gases in the blood, or other metabolic changes.

Are the Brain Cell Changes due to Internal Secretions or to Altered Gases in the Blood?

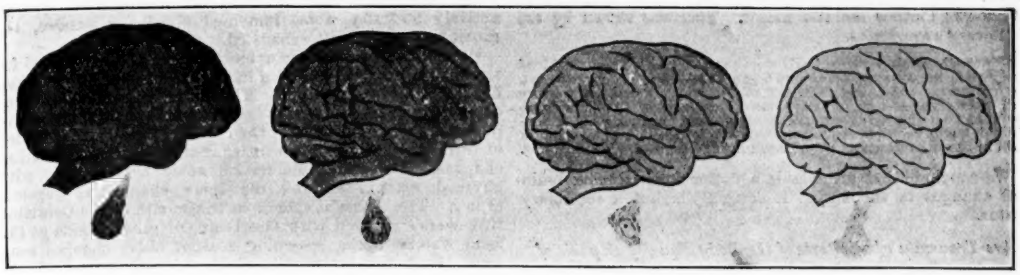
If the kinetic theory of shock be correct, then if the circulation of two dogs be so anastomosed that the blood streams of both animals freely intermingle and if only one animal be traumatised, the functional impairment and the brain cell changes will be limited to the animal receiving the injury; but if shock be due to the production of some noxious secretion, to some poisonous product of metabolism thrown into the blood stream, secondarily affecting the brain, or if shock be due to gaseous changes in the blood caused by trauma, then both dogs should suffer equally.

Our experiments were as follows. The proximal end of one carotid artery of Dog A was anastomosed with the distal end of the corresponding carotid artery of Dog B, and one jugular vein of Dog A was then anastomosed with the corresponding vein of Dog B, so that the blood streams of both animals intermingled with entire freedom and in large volume. (Fig. 6.) The dogs were approximately of equal weight and physical condition. For two hours Dog A was traumatised. The animals were killed simultaneously, and their brain cells were studied by parallel technique. The experiment showed brain cell changes—typical shock changes—only in Dog A, the dog whose body had been traumatised, and no brain cell changes in Dog B, whose body had not been traumatised, but through whose brain the blood of the traumatised dog flowed freely during the two hours. This result strongly supports the kinetic theory, and with equal strength opposes any theory which implies that internal secretions, gaseous changes in the blood, or the production of noxious products may secondarily cause brain cell changes. (Fig. 7.)

Does Anæmia Alone Cause Brain Cell Changes?

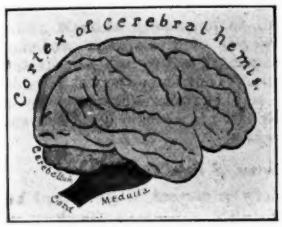
There remains also the possibility that low blood pressure—anæmia alone—may cause the brain cell changes. We have shown elsewhere the destructive effects of anæmia on the brain cells; that in resuscitation experiments a total anæmia of seven minutes caused fatal brain cell changes; and that brain cell changes are also produced by low blood

FIG. 1.—*Classification.*



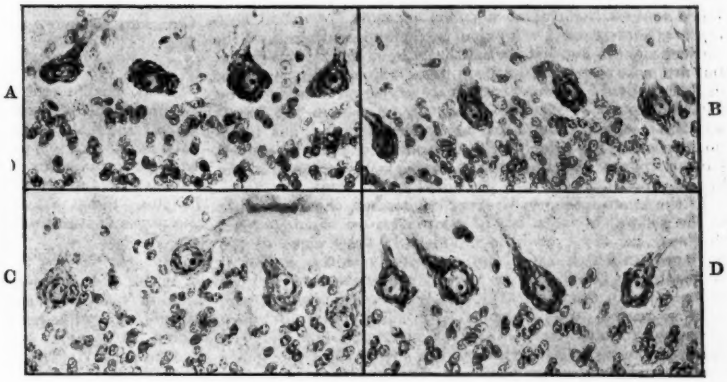
Hyperchromatic. Normal. Fatigued. Exhausted.

FIG. 2.



Changes more marked in cortex and cerebellum than in medulla and cord.

FIG. 3.—*Areas from Cerebellum.*

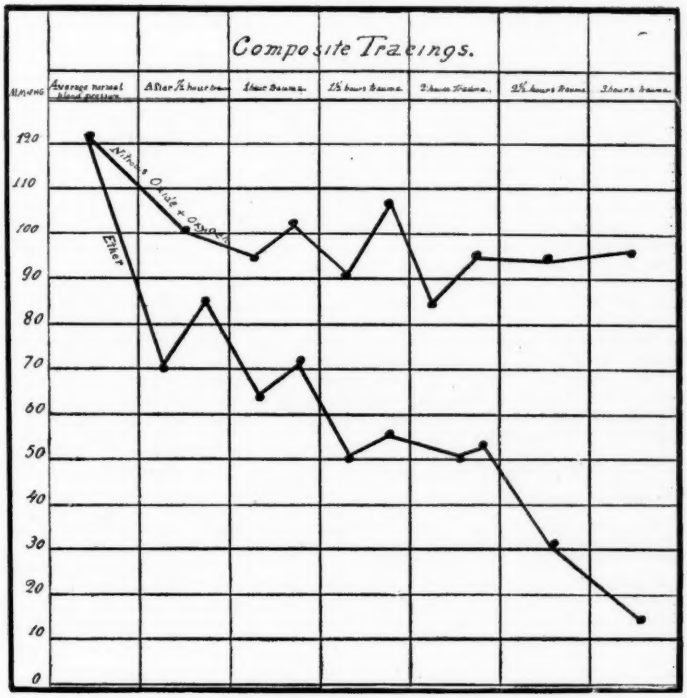


A, Normal dog. B, Shocked "spinal" dog. C, Shocked dog (ether anæsthesia). D, Shocked dog (N_2O anæsthesia.)

FIG. 4.

A Marathon runner.

FIG. 5.



pressure. We had hoped that the brain cell changes in shock were due wholly to low blood pressure, but in our blood transfusion experiments we found that, in addition, there was another definite factor. This was shown by the following experiment.

The blood-vessels of two animals were anastomosed, and as the blood pressure in the traumatised animal began to fall fresh blood was added, so that during the entire séance of shock trauma the blood pressure was maintained at the normal level. Specimens of the brain were removed from the living animal and brain cell changes were demonstrated, but it required much more trauma to produce these changes than in the animals whose blood pressure was allowed to take its course.

We conclude that anæmia is a factor in producing brain cell changes in shock, yet it certainly is but a secondary factor.

Are Traumata of all Parts of the Body Equally Capable of Producing Shock?

Innumerable nerve receptors have been implanted in the body for the purpose of effecting adaptation to environment. Some of these receptors, such as those which assist in acquiring food, may be designated *beneceptors*, while other receptors which have as their function the protection of the body against harmful or nocuous contacts are called *nociceptors* (Sherrington). As one would expect, therefore, the nociceptors are not distributed throughout the body equally, but are most numerous in those parts which in the course of evolution have been most frequently subjected to injury. So the nociceptors of the skin are most numerous in the hands and the feet, while the back, being less exposed, has fewer nociceptors. Likewise in the interior and more protected parts there are few nociceptors, and there are none in the brain, which has ever been protected by the skull.

If the kinetic theory of shock be correct, then according to the general biologic law of adaptation we should expect that surgical shock could be produced in those parts of the body only in which have been implanted sensitive nerves or nociceptors. On the other hand, since there are few or no nociceptors in those parts of the body which have always been protected against injury and which have not been presented to our enemies and to our rough environment, then, according to this theory, the injury of these parts cannot produce shock. From numerous experiments we find that little or no true surgical shock can be produced by trauma of the deep parts of the back behind the peritoneum and in the brain.

We therefore took the brain as a representative tissue having no nociceptors or pain nerves, the physical trauma of which could produce an adaptive response, and we put this to a direct experimental test, as follows.

The skull of a dog was cut away under combined local and general anæsthesia. The brain was traumatised with rough gauze and instruments, and was extensively cauterised even to the extent of gradual destruction of one hemisphere.

No noticeable change in the blood pressure was apparent during the operation, and no change was observed in the brain cells of the opposite uninjured hemisphere. Our experiment showed, therefore, that the cerebral hemispheres possess no mechanism for the production of pure surgical shock. Collapse from interference with the medullary centres is, of course, not true surgical shock.

Now, if trauma of sensitive parts of the body produces an adaptive response by the brain cells causing a release of energy, and if this release of energy, when the trauma is sufficiently strong or repeated with sufficient frequency, leads to functional exhaustion and brain cell changes, then with equal facility exhaustion should be produced by perceptions through the special senses, such as seeing or hearing danger. Fear and trauma being phylogenetically akin, either one alone or associated with the other should cause shock. This point was then studied.

Can Fear Alone Cause Shock?

This was put to a direct experimental test as follows.

Rabbits were frightened by dogs, but were not injured and were not chased. After various periods of time the animals were killed and their brain cells were compared with the normal.

Widespread changes were seen. The principal clinical phenomena were rapid heart, accelerated respiration, prostration, tremors, and a rise in temperature. The dog showed similar phenomena, excepting that instead of muscular relaxation, as in the rabbit, the dog showed aggressive muscular action. Both the dog and the rabbit were exhausted, and although the dog exerted himself actively and the rabbit remained physically passive, the rabbit was much more exhausted. (Fig. 8.)

Observations were made upon the brain of a fox chased for two hours by members of a hunt club and finally overtaken by the hounds and killed. The brain cells of this fox as compared with those of a normal fox showed extensive physical changes in most of the cells. (Fig. 9.) The brains of dogs and woodchucks after fighting showed similar changes. Emotional stimulation alone or combined with physical activity showed the same changes as physical injury. The brains of salmon at the mouth of the Columbia river were compared with the brains of other salmon at the head waters in the spawning season. Like changes were seen. Even the brain cells of electric fish were similarly altered after discharges.

That exhaustion follows fright and terror is attested by every human experience. Fear causes a low threshold, and in that stage the effects of traumatic or psychic stimuli are augmented. A patient going under anæsthesia in fear displays the fear phenomena throughout the operation, and therefore is shocked more readily than if he were without fear.

Insomnia.

If all the foregoing conditions show brain cell changes characteristic of exhaustion, then keeping animals awake should show the same. The rôle of insomnia in producing exhaustion was put to experimental test as follows: Rabbits were kept awake for 100 hours. They then showed physical exhaustion and the brain cell changes characteristic of fatigue. Sleep restored both the physiologic condition and the physical status of the brain cells. (Fig. 10.)

Influence of other Causes of Vital Depression.

Again, if the kinetic theory be correct, if an animal has already been subjected to other influences which cause morphologic changes in the brain cells and it be then subjected to trauma, such an animal would be expected to endure less trauma, and survive, than a normal animal. Among the agencies that cause the characteristic changes of fatigue in the morphology of the brain cells are anæmia, infection, toxæmia, physical exercise, old age, starvation, exophthalmic goitre, fear, worry, and physical injury. (These studies will soon be published in detail.) Further observations have shown that just in proportion to the deterioration in the brain cells from any of these factors by so much less can an animal endure injury and survive.

Type of Trauma.

It may here be added that the intensity of shock depends entirely on the type of trauma to which one is subjected. Tearing, crushing, and bruising cause the greatest shock, while comparatively slight shock would result if the body were cut to pieces with a razor. This observation is so commonplace that its significance is easily lost—namely, that the more nearly the trauma resembles harsh contact with environment and the method of attack of the carnivora, the greater will be the resultant shock.

The Effect of Drugs.

Such stimulants as strychnine and nicotine in physiologic dosage cause physical exhaustion and brain cell changes. First, there are strong convulsions; if the dose is repeated the convulsions become milder until the stage of exhaustion is reached. It is as rational to treat the exhaustion of shock with strychnine as to treat the exhaustion of strychnine with trauma. These agencies are synergistic. Alcohol in large doses causes physical exhaustion and brain cell changes. Morphia and scopolamine even in toxic doses cause no apparent changes in the brain cells. The quiet and solace produced by these drugs undoubtedly tend to conserve the output of energy. Morphia and scopolamine in physiologic dosage diminish but do not prevent shock from trauma, but they do prevent psychic shock. Under the influence of morphia no one is brave, no one is a coward; one is indifferent to danger. This negative state induced by morphia and scopolamine is due to the depression of the associational power of the brain—the depression or obliteration of associative memory—and this is an important clinical cue.

FIG. 6.

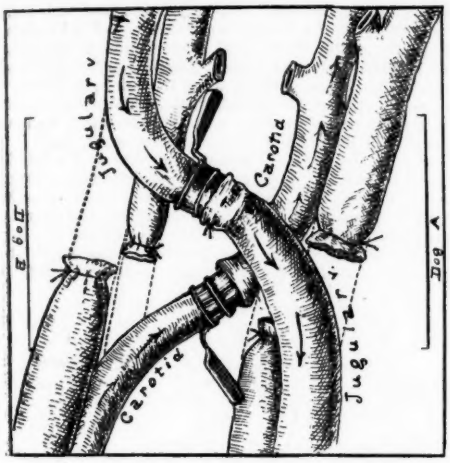
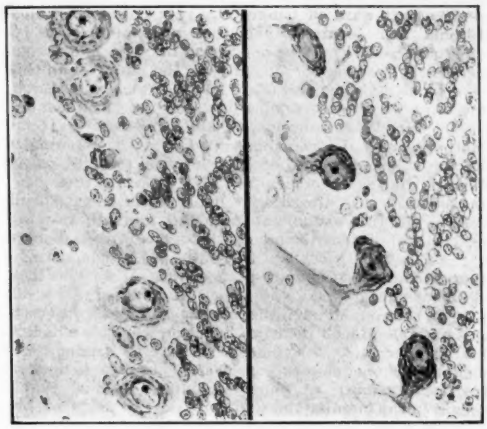


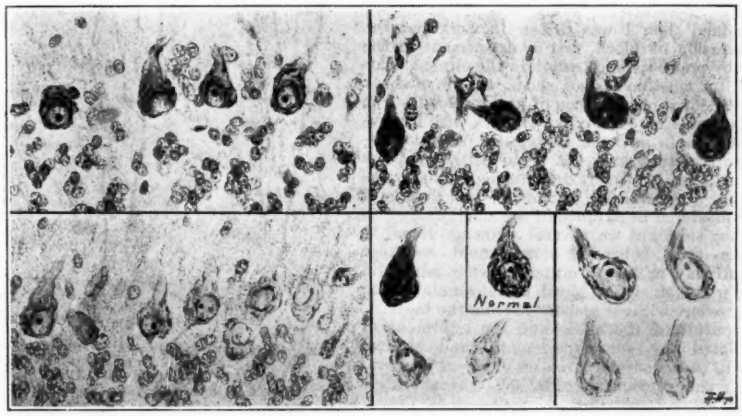
Diagram showing anastomosis of the circulation of Dog A and Dog B.

B FIG. 7. A



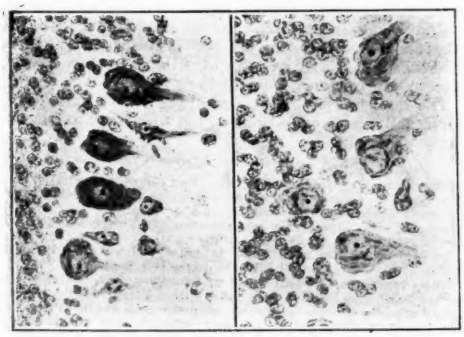
Symbiotic shock. Experiment 2 (259A). The cerebellum from the unshocked Dog B (recipient), and from the shocked Dog A (donor).

FIG. 8.



Areas from cerebellum of rabbit. A, Normal rabbit. B, Rabbit during fright. C, Six hours after fright. D, Characteristic change in Purkinje cells in fright.

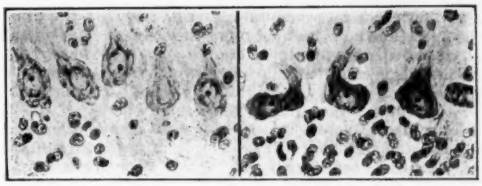
FIG. 9.



Area from cerebellum of normal fox.

Area from cerebellum of fox chased by hounds.

FIG. 10.



Insomnia. Rabbit awake 109 hours.

Insomnia. Rabbit awake 109 hours; normal sleep 6 hours.

The Treatment of Shock.

It is obvious at once not only that stimulants are without value, but that they do harm. Their use is as illogical as is an attempt to ward off bankruptcy by spending more money. Morphia and sedatives generally are valuable as conservators of energy. The one important goal is overcoming the destructive effect of anæmia on the brain. Can this be done by using saline infusions? An extensive research on this point has shown conclusively that the blood cannot be diluted with saline solution, except temporarily. If saline solution is infused continuously into a vein of a normal dog the animal may be killed in from five to eight minutes. What is the cause of death? Is it asphyxia produced by transudation into the lung? No. It is the mechanical fixation of the abdominal and the thoracic respiratory muscles and of the diaphragm through enormous distension of the abdominal viscera. The walls and the lumen of the stomach and intestines are packed with saline; the liver is enormously engorged; the spleen is enlarged; the saline solution runs out through the blood vessel walls just as fast as it enters. Hence in saline solution we have a definitely limited though useful remedy. Posture, bandaging, the pneumatic rubber suit—all are useful, but none is final. The final remedy must be some circulating medium that will remain in the circulation, that will do the work of blood, and that when introduced in large enough quantities will develop a peripheral resistance through stretching the elastic blood vessel. This peripheral resistance based on passive elasticity will then serve as a substitute for the exhausted vasomotor centre. The heart will continue to act so long as the coronary arteries receive a pressure of 40 or more mm. Hg. and as the proper nutriment is given the heart muscle. The only fluid that will answer these purposes is blood—human blood.

Having determined this, I was driven to work out the problem of transfusion of blood, first by experiment in the laboratory, later by practical application in the clinic. This has proven ideal. Almost no case of shock will die of shock alone if given an adequate transfusion of human blood. The transformation is dramatic, especially in shock with hæmorrhage. One hint here in advance of detailed publication—low blood pressure deteriorates the brain cells, therefore avoid the final collapse by timely transfusion. The transfusion of blood is a specialised technique, the details of which should be mastered in advance of the emergency.

As an interesting sidelight we several years ago found in our investigation that beheaded dogs could be kept "alive" (?) a half day or longer either by slow adrenalin infusion or by over-transfusion of blood, thereby maintaining a normal blood pressure without assistance from the brain.

Having now considered the cause and the treatment of shock as elucidated by our experimental and clinical researches, we will next consider a matter of direct practical importance—viz., the prevention of shock—the shockless operation through anoci-association.

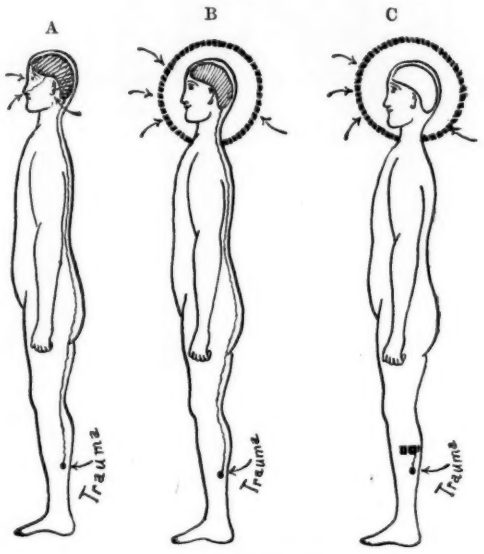
Anoci-association.

On these foregoing premises the kinetic theory rests. On the kinetic theory a new principle of operative surgery is founded. This principle can best be expressed by coining a new word—viz., anoci-association. An adequate stimulus with or without inhalation anæsthesia, whether from trauma or from emotion, causes the brain cells to discharge some of their stored energy—that is to say, the sight of the operating room, the spoken word implying danger, the taking of the anæsthetic, the instrumental injury of tissues in the course of the operation, and the traction of the stitches after operation, all are adequate stimuli. Therefore, the stored energy of the brain cells is consumed during surgical operations and during psychic strain. Obviously the only practical method of preventing the consumption of this stored energy of the brain cells is the development of a principle of operative surgery the practice of which will exclude from the brain the stimuli of the special senses and the stimuli of common sensation. This is the principle of *anoci-association*, meaning the exclusion of all *nocuous* or harmful *associations* or stimuli. (Fig. 11.)

The principle of anoci-association may be illustrated by the wrecked *Titanic*. The story of the stress and the psychic strain of the survivors is known, that of the lost may easily be imagined; the future haunting memory of this experience by the survivors may be safely predicted. Such is the result of the conventional surgical operation. Now, if a survivor of this ship had been so skilfully anæsthetised on his bed just before the accident that he knew nothing of the impending disaster, and if he then had been gently carried up on deck, lowered into a lifeboat, and taken aboard the rescue ship without being allowed to awaken from his anæsthesia until in bed in a comfortable state-room,—if then he was told that he had been transferred from the sinking ship, but that he was now safe and would soon see his home, this would be anoci-association.

Now is there a single anæsthetic that will exclude all nocuous or harmful physical and psychic stimuli from the brain? By blocking nerve conduction local anæsthetics protect the brain from local operative injury, but they do not protect the brain against destructive psychic strain; inhalation anæsthetics exclude the psychic stimulation of the brain cells, but do *not* exclude the operative stimulation;

FIG. 11.



Anoci-association diagram.

A, Auditory, visual, olfactory, and traumatic noci impulses reaching the brain. B, Auditory, visual, and olfactory associations excluded. C, Nerve blocked by cocaine; patient in anoci-association.

and anæsthetics introduced hypodermically, being uncontrollable, are excluded on principle. Each anæsthetic covers a part of the field, but there is no single agent that *alone* can produce *anoci-association*, which is the goal of operative surgery. We therefore do not advocate ether alone, nor chloroform alone, nor nitrous oxide alone; we do not advocate local anæsthesia alone, nor morphine and scopolamine alone, nor spinal anæsthesia alone, but through *selection* and *combination* of anæsthetics we aim to attain an anæsthesia that will exclude all stimuli from the brain, and thereby attain anoci-association.

The description of this technique will be limited to abdominal and goitre operations which will serve as illustrations of the principle.

Abdominal Operations.

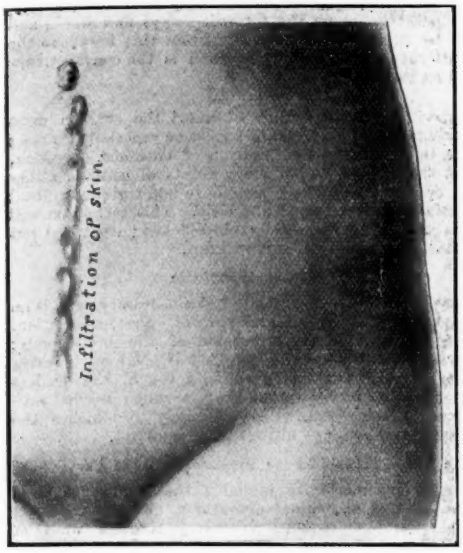
1st.—Excluding infancy, old age, and depressed vitality, we first administer, as an average, 1/6th of a grain of morphine and 1/150th of a grain of scopolamine one hour before operation.

2nd.—If local anæsthesia alone is employed, novocaine in 1/400 solution is used by progressive local infiltration.

3rd.—If inhalation anæsthesia is employed we administer nitrous oxide—either alone or with ether added as required.

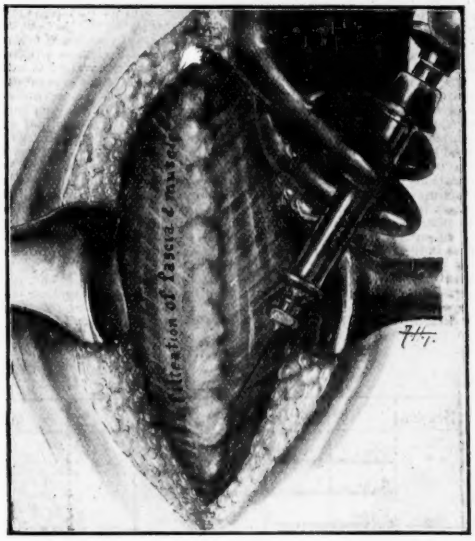
4th.—As soon as the patient is unconscious, first the skin and then the subcutaneous tissue is infiltrated with 1/400 novocaine. In order to spread the novocaine immediate local pressure is applied with the hand. Anæsthesia is immediate. Incision through this anæsthetised zone exposes the fascia. The fascia is then novocainised, subjected to pressure, and divided. This brings us to the remaining muscle or posterior sheath and to the peritoneum. These structures are then

FIG. 12A.



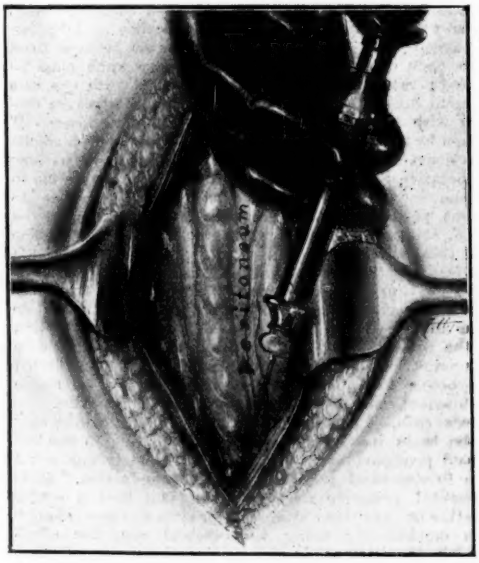
Infiltration of skin and subcutaneous tissue with 1 : 400 novocaine.

FIG. 12B.



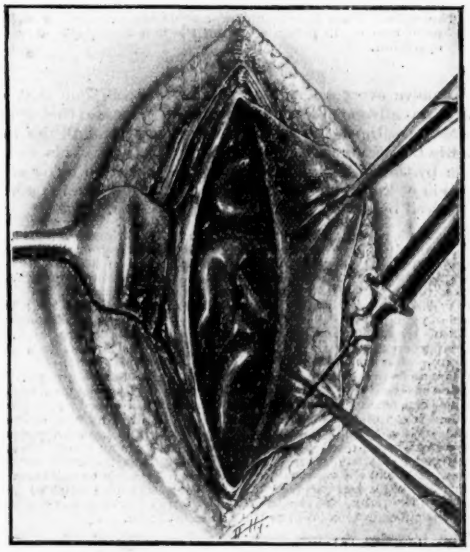
Infiltration of fascia and muscle.

FIG. 12C.



Infiltration of posterior sheath and peritoneum

FIG. 12D.



Peritoneum inverted. Infiltration with ½ per cent. of quinine and urea hydrochloride.

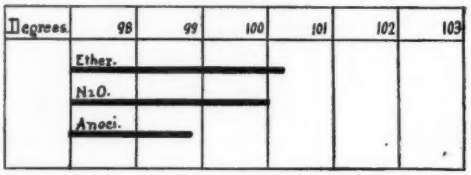
infiltrated with novocaine, subjected to pressure, and divided within the blocked zone. If blocking has been complete, then upon opening the abdomen there will be found no increased intra-abdominal pressure, no tendency to expulsion of the intestines, and no muscular rigidity. (Figs. 12 A-D.

5th.—The peritoneum is next everted and a ½ per cent. solution of quinine and urea hydrochloride is infiltrated about the line of proposed sutures, and as before the parts are then subjected to momentary pressure. This infiltration serves as a block, and as its effects last for several days it should prevent, or at least minimise, the post-operative wound pain and the post-operative gas pains, and by so much minimise post-operative shock. Quinine and urea causes a certain amount of œdema of tissue which lasts for some time after the wound is healed.

6th.—The relaxed abdominal wall will permit exploration of the entire abdominal cavity with ease. If there is no cancer nor acute infection in the field of operation, then the following regions may be blocked as completely and in the same manner as the abdominal wall—viz., the meso-appendix, the base of the gall-bladder, the uterus, the broad ligaments and the round ligaments, the mesentery, and any portion of the peritoneum. On account of the absence of nociceptors operations on the stomach and intestines made without pulling on their attachment cause no pain, and hence the novocaine infiltration of these viscera is not required. If the brain has received no stimuli during the operation then the closure of the upper abdomen is as easy as the closure of the lower—all is done with the ease of relaxation. What is the result? No matter how extensive the operation, no matter how weak the patient, no matter what part is involved, if *anoci* technique is perfectly carried out the pulse-rate at the end of the operation is the same as at the beginning. The post-operative rise of temperature, the acceleration of the pulse, the pain, the nausea, and the distension are minimised or wholly prevented. (Fig. 13.)

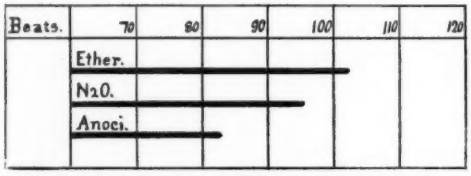
FIG. 13.

A



The temperature. Each heavy line represents the average 5 P.M. temperature of 10 patients during the first four days after operation.

B



The pulse. Each heavy line represents the average 5 P.M. pulse-rate of 10 patients during the first four days after operation.

Graves's Disease.

I believe everyone will agree that a technique that can carry an advanced exophthalmic goitre case through an operation without increasing the pulse-rate can all the more readily do as much for any other operation. This can be done by the following technique, the operation being either ligation or lobectomy. The patient's consent to an operation is secured before hospital treatment is begun.

Ligation is performed without removing the patient from bed. In performing ligation nitrous oxide and oxygen may or may not be administered; but the brain is always protected by a complete local blocking with novocaine during operation, and a complete quinine and urea hydrochloride infiltration at the close of the operation.

If *lobectomy* is performed the patient is anæsthetised with nitrous oxide-oxygen in bed. As fictitious anæsthesia has been given under the guise of treatment for several days previous to the operation, the patient when anæsthetised is free from psychic strain, as he is under the impression that he is receiving an inhalation treatment.

When anæsthetised the patient is taken to the operating-room. The division of tissue is preceded by a blocking so complete that no activating impulse can reach the brain. Before the wound is closed every part of the field is completely blocked by quinine and urea hydrochloride injected with a hypodermic needle. The patient is kept unconscious, under anæsthesia, until he has returned to his room and until his room is restored to its condition when administration of the anæsthetic was begun. Since in the course of the cycle from his room to operation and return his brain has received no activating stimuli there can be no change in the pulse. No record of the operation has been written either upon the subconscious brain or the conscious brain.

The benefits do not end, however, with the immediate results. *The post-operative hyperthyroidism is prevented or minimised*, and the later clinical results are improved to the same extent as are the *immediate* results.

When a case of Graves's disease which is not under surgical treatment is subjected to a severe psychic shock—to a heavy nervous strain or to intense worry—what happens? The disease is aggravated for weeks or for months, and not infrequently death results. The evil effects of the stress of facing the operating-room are not only seen immediately, but are perpetuated on the following days and weeks and months by their frequent recall. From this handicap the *anoci* patient is free, and by so much is the convalescence speeded on its way.*

Comments.

In carrying out the details of anoci the surgeon must re-educate himself; his assistants must be especially trained; in short, in the patient's entire cycle of entrance, operation, and exit there must be no sharp points of contact, either psychic or physical. Those who have had training in local anæsthesia will find the details easy. This technique will reach its purpose only if rigidly carried out; if carried out perfunctorily as a dull ritual it will fail.

Inhalation Anæsthetic.

The use of nitrous oxide, while not a necessary part, is an important part of the technique of anoci-association. Its greatest value is its protection of the brain cells; but another advantage is the fact that if the local blocking is faulty or the surgeon needlessly rough, the patient retains still the power of offering a much needed self-protection. Then, too, ether definitely diminishes the immunity of the patient—nitrous oxide does not.

What Effect has Anoci on the Morbidity and the Mortality?

The operation morbidity includes the immediate post-operative pain in abdominal operations, gas pains, painful scars, nervousness, reduced efficiency through want of energy, and aseptic wound fever.

Post-operative pain.—Quinine and urea hydrochloride wholly prevents pain if it is injected into the entire wound. But quinine and urea causes some œdema of the wound; hence one should limit the wound infiltration to cases needing it—e.g., exophthalmic goitre cases—bad risks generally.

Post-operative gas pain.—This baffling phenomenon may be largely or wholly prevented by the technique already described—i.e., by the hypodermic infiltration with quinine and urea hydrochloride of a wide margin of tissue, including every part of the divided peritoneum. The stitches must be inserted within the blocked zone. Post-operative gas pain can be explained as a biologic adaptation to overcome infection. In the course of evolution all abdominal penetrations are infected, but the peritoneum is able to overcome most infections if they can be localised. To localise an infection the intestine and the abdominal wall must be kept fixed against each other; that they may do so each must be inhibited; the intestine must be distended with gas, the abdominal muscle must be rigid. If the intestine be distended with gas and fixed then digestion must cease. If digestion be arrested then there is anorexia, or even vomiting to expel food from the stomach. This shows us how post-operative gas pains are due to a biologic adaptation to overcome infection, and explains their resemblance to incipient peritonitis. Nature does not depend upon the surgeon, or perhaps she knows the surgeon too well. The test of this hypothesis is easily made. If the brain through which this adaptive response is made is kept in ignorance of the incision into the peritoneum (*a*) by progressive novocaine blocking throughout the operation, and (*b*) by post-operative quinine and urea blocking to break later communication with the brain through stitch tension, then there should be no gas pains. Clinical experience has abundantly confirmed this hypothesis. It must be remembered that if a single nerve filament escapes the block there will be gas pains.

Painful scar.—I postulate that the lesion of a painful scar is in the brain, not in the scar; that it is due to the low threshold produced by injury, and is intimately connected with a fundamental principle of nerve conduction. This fundamental principle relates to the fact that a strong traumatic or psychic stimulus produces some change in the conductivity along its cerebral arc, the effect of which is that of lowering the threshold of that arc. This might be illustrated by the phenomena following a hold-up at the point of a pistol on a certain street corner. For a long time after such a psychic

stress any association with that corner would recapitulate the experience. In this manner throughout life various experiences may lower the threshold in innumerable ways. I assume that there is a similar result after a traumatic stimulus. The arc receiving the stimulus suffers a lowered threshold, and hence from that time on mere trifles become adequate stimuli. Such a result is seen in the sensitiveness after fractures and in the painful stumps of crushed limbs.

Now, if an operation is so performed that no strong stimulus reaches the brain either during or after the operation, then the threshold of the cerebral arc from the wound will not be lowered. Since the threshold is not lowered, contact with the scar or any injury to that part will have no more effect than will contact with any other part of the body. In other words, the scar will be no more sensitive than is the skin elsewhere. Hence, we see how painful scar may be prevented by complete anoci. Our clinical data seem to support this hypothesis, although it has not as yet been fully worked out.

Nervousness.—When in the night one is threatened with an unknown danger the brain threshold is always lowered, apparently as an adaptation to the more swift and accurate detection of the danger. Likewise when one has received a crushing physical injury there is a universal lowering of the threshold. During these states of tenseness minor stimuli have major effects, or, in other words, one is "nervous."

Now, as we have seen, the subconscious brain is tortured directly during unblocked operations under inhalation anæsthesia. The resultant general effect on the brain thresholds is demonstrably the same as if the injury had been inflicted without anæsthesia—i.e., after the ordeal of punishment of the subconscious mind during an operation the patient emerges "nervous," "exhausted"—and since a low threshold is lavish in its waste of nervous energy recuperation is slow. Hence there results a period of post-operative nervousness, of post-operative loss of efficiency. It is obvious—and clinical experience abundantly proves—that the threshold is preserved by complete anoci, hence the unpleasant, damaging post-operative phenomena are avoided.

Lastly, let us consider that curious phenomenon—viz., post-operative aseptic wound fever.

Aseptic Wound Fever in Ordinary Cases and the So-called "Post-operative Hyperthyroidism" in Operations for Exophthalmic Goitre.

Since it is a physical law that any form of force may be converted into heat, and that heat thus produced, if not at once transformed into motion, must increase the temperature of the body affected, we see readily why any stimulus, mechanical or physical, which normally would cause increased motor activity must cause a rise in temperature if complete motor expression is impossible. Anything, therefore, that drives the motor mechanism of the body beyond the point of normal expression will cause fever. Anger, athletic contests, fear, physical injuries, all produce a rapid oxidation of certain body compounds too great for complete translation into motion.

In operations under general anæsthesia only, we expected routinely to see some post-operative rise of temperature as a result of the suppressed power of motor response to the physical and psychical injury; but by the use of anoci-association, both during and after the operation, we discovered a change of post-operative temperature and pulse-rate. We were therefore forced to the conclusion that, barring infection and the absorption of hæmoglobin, post-operative fever is the result of increased oxidation, this being in turn the result of the psychic and traumatic stimuli of the operation to which natural response has been denied.

These observations lead us to a further knowledge of the phenomena accompanying Graves's disease. This disease is due to a disarrangement of the general motor mechanism whereby the threshold of the brain to both psychical and traumatic stimuli has been lowered in varying degree. The stimulus which in the normal individual would cause no appreciable change in pulse or temperature, will, in a case of Graves's disease, drive the brain and body so fast that greatly increased motor activity and a rise in temperature are caused. Anything, therefore, that raises the threshold of the brain to stimuli must diminish the susceptibility to pulse and temperature changes in the patient suffering from Graves's disease as well as in the normal individual. This explains why patients under morphia or in a stupor show little change after excitation, and why an operation performed under anoci is followed by diminished or no aseptic fever and in Graves's disease by no so-called "hyperthyroidism."

With these conceptions a surgical operation takes on a new meaning. It becomes a game of biologic chess. The patient never makes the first move, but, through the subconscious brain, counters. The many countermoves of the subconscious brain can be clearly seen and appreciated in changes of the respiration and the pulse, in muscular contractions, in the alteration of muscular tone, in vaso-motor changes, and in pupillary reactions. All of these are responses just as purposeful as the protesting cry or the spoken word of the equally injured but unanæsthetised man. When anoci is carried out perfectly no symbolic protest is made; no change in the threshold is made; no expenditure of nervous energy is made. We must re-educate ourselves so that we can hear the unspoken word; can see the motion in the unmoved muscle. We must practise, not mechanical surgery, but biologic surgery.

We have now stated the kinetic theory of shock and on it have formulated an operative principle (anoci-association), the practice of which enables the surgeon to perform shockless operations. Before stating the clinical results we will discuss more fully certain points and objections to the method.

The first point is the choice of the inhalation anæsthetic and of the anæsthetist. As to the anæsthetic, choice lies between the lipoid solvent anæsthetics, such as ether and chloroform, and nitrous oxide.

Ether anæsthesia has certain advantages. It is relatively safe in inexperienced hands; its bulk is small, it is inexpensive, and requires the simplest apparatus for administration. Against ether stands the malodor; the choking sensation in going under its influence; the drunken nausea sensation when becoming conscious again; and the fact that the dose required to dissolve the lipoid in the brain sufficiently to cause anæsthesia also dissolves the lipoid in the liver, the kidney, the red blood corpuscles, and other important structures. Ether also chemically hinders or prohibits phagocytosis. Hence in addition to anæsthesia this powerful chemical solvent may produce nephritis, pneumonia, anæmia, and many other tissue impairments; besides, in the presence of infection ether arrays itself on the side of infection against the patient. We have already referred to the sense of irritation and suffocation when going under the influence of ether. This is probably the meaning of the "stage of excitement," because the feeling of suffocation is one of the most powerful brain stimulants.

These objections led us to turn to nitrous oxide, an anæsthetic pleasant to take, devoid of baneful after results, and serving as a measurable protection against shock. Against nitrous oxide we found four disadvantages: (1) Its expense; (2) the insufficient muscular relaxation produced; (3) the difficulty of its administration; and (4) its lack of safety in unskilled hands. If it can be shown that the technical difficulties of nitrous oxide administration can be overcome, that relaxation can be secured and the mortality and the morbidity can be diminished by its use in connexion with local anæsthesia or in certain cases with the addition of ether, then all other questions become ethical issues with the surgeon and the hospital.

If relaxation is incomplete under nitrous oxide alone, then this lack may be met by several minutes of ether administration, or by the addition of a little ether with the nitrous oxide until relaxation is complete.

Let us now turn to the frequently made objection that nitrous oxide in unskilled hands is dangerous. This criticism can be made only by those who wish to advocate filling one of the most critical posts at an operation by untrained hands. This, too, calls for ethical not scientific discussion. The question rather is this, Is nitrous oxide a safe anæsthetic in skilled hands? That question can be answered to this extent: that four skilled anæsthetists have administered nitrous oxide for surgical operations over 18,000 times without an anæsthetic fatality. In unskilled hands I am equally sure nitrous oxide is not safe. The results in untrained hands might be comparable to those of the operation itself if the newest hospital interne were to perform major abdominal and neck operations on his first day of service.

Just as some communities have been terrified by needless

surgical disasters, just so will some communities be terrified by equally needless anæsthetic deaths from nitrous oxide, probably the safest of all anæsthetics when skilfully given.

The disadvantages of nitrous oxide are almost wholly technical and can be mastered, while the disadvantages of ether are almost wholly chemical, hence not controllable. As already stated, the chemical—hence uncontrollable—disadvantages of ether are: its solvent power over various highly organised fats, such as lecithin in the red blood corpuscles, in the liver cells, kidney cells, and, of course, in the brain cells, and its harmful action in impairing or destroying the immunity of the patient. In close risks with acute infection ether alone may cause death.

The principle of anoci offers a partial solution of this difficulty in the use of ether anæsthesia, which is so satisfactory to the surgeon, so unsatisfactory to the patient. If the field of operation is blocked, then only just enough ether need be given to hold unconsciousness, and so the chemical damage may be reduced quantitatively to the minimum. *Far better this combination than nitrous oxide in any but safe hands!*

By the introduction of nitrous oxide we have added slightly to the surgical burden. The use of one kind of local anæsthetic for the immediate effect and of another for the later effect in addition to inhalation anæsthesia adds a little more to the burden; the training of the nurses and of the resident staff adds still a little more—in short, the surgical service, and especially the surgeon himself, must undergo a certain amount of re-education, or at least must gain a new viewpoint. Should the burden of the surgeon be thus increased? Here, again, it seems to me the question rather is this: Is it better for the patient? If the morbidity and the mortality are decreased, then this question, too, becomes one of good or bad conduct—of duty. To answer from any other than the patient's viewpoint is the same as if on the morning of a vitally important operation the surgeon were to put to his patient in words the thought that had been in his mind—viz.: "You are about to undergo a dangerous operation. I could lessen the danger by one-half, and could prevent most of your after-suffering, but because I am too busy a man to bother with the details that would accomplish this, you must take the double chance of suffering and death."

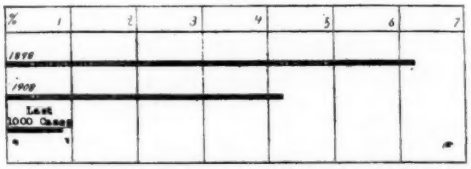
The foregoing is a summary of a large clinical experience and more than 1200 experiments on animals, most of the data of which have been published in detail in five monographs. It is hoped that more monographs of data will be published during this year. We have shown that shock may be produced by physical trauma with or without inhalation anæsthesia; that those parts of the body having the greatest number of nociceptors and which defend the most important regions by muscular action are the most shock-producing on receiving trauma. In the distribution of the defending nociceptors we have a brief epitome of our phylogenetic struggle for existence. We have shown that nitrous oxide anæsthesia as compared to ether anæsthesia is a protective agent against shock—protective through its interference with the use of oxygen by the brain cells—on the same principle as the action of a chemical fire-extinguisher. We have shown that the physical exhaustion and the brain cell changes are due to an adaptive response of the brain to the injury—a silent motionless effort to escape from the physical injury of the operation; that if the field of operation is blocked with local anæsthesia, or if the nerve connexion between the brain and the injury is blocked, physical injury can cause no shock. We have shown that the motor mechanism may be powerfully driven by psychic stimuli—perhaps as powerfully as by traumatic and physical exhaustion—and that corresponding brain cell changes are produced. We have seen that if both the traumatic and the psychic stimuli are excluded shock cannot be produced. We have offered evidence that these physical changes in the brain cells are not produced by alteration in the gases in the blood or by metabolic processes from the shock-producing psychic or traumatic stimuli. We have shown that the brain cell changes are not due to anæmia from lowered blood pressure alone. Hence we are forced to conclude that shock is an exhaustion phenomenon due to the driving of the motor mechanism by adequate stimuli, and that it is expressed by physical exhaustion and brain cell changes.

Clinical Results.

We have now presented the theory of shock and a technique by which it may be prevented; but no theory is worth more than its yield in practice, and the only test of laboratory findings is the crucible of the clinic.

The clinical results here reported have been confirmed by the personal experience of Bloodgood, Cabot, and a number of other American surgeons. The accompanying charts show the results of a critical study of the clinical data of parallel series of operations performed at the Lakeside Hospital—the last group of operations under ether alone, under nitrous oxide alone, and under anoci. Were it possible to express the subjective sensations of the patient the contrast would certainly be even more striking. There is no longer need of a post-operative recovery room. The work of the nurse is greatly minimised, and the clinical aspect both in and out of the operating room is altered. My associate, Dr. W. E. Lower, and I during the past year performed 729 abdominal sections of every grade with a mortality-rate of 1·7 per cent.; and in the Lakeside Hospital Service, where all kinds of acute emergencies are met, and where most of my own private work is done, there were performed by my associates and myself in the past year operations on 2672 patients with a mortality-rate of 1·9 per cent.—a result never before approached in the Lakeside Hospital. In the last 1000

FIG 14.



Mortality-rate per 1000 of operative cases, from Lakeside Hospital.

operations performed by Dr. Lower and myself—these operations including every risk of a general surgical practice—the mortality-rate has been 0·8 per cent. (Fig. 14.)

Cleveland, Ohio, U.S.A.

THE FIRST INTER-COLONIAL (WEST INDIES) TUBERCULOSIS CONFERENCE.—This conference was held in the Legislative Council Chamber, Port of Spain, from March 25th to 31st, under the patronage of His Excellency Sir George Le Hunte, G.C.M.G. Delegates were present representing Great Britain, the Department of Agriculture, British Guiana, Antigua, Porto Rico, Surinam, Martinique, Barbados, Jamaica, the Municipality of Kingston, Jamaica, Colombia, Venezuela, Grenada, Bermuda, and Trinidad. The President was the Hon. H. L. Clare, Surgeon-General for Trinidad. A series of resolutions were passed by the conference referring to the alarming prevalence of tuberculosis in the West Indies, and urging as administrative measures notification, housing reform, and the establishment of tuberculosis dispensaries and other measures for the detection, prevention, and treatment of the disease; the establishment of antituberculosis associations throughout the archipelago; the stamping out of bovine tuberculosis; the introduction of teaching on hygiene and sanitation in all schools; and the general adoption of efficient registration of births, deaths, and marriages as an aid in controlling tuberculosis. Several interesting papers were read, notably one by Dr. Eliseo Font y Guillot, of Porto Rico, who showed a record of good work in that island by an energetic antituberculosis association, with statutory control of the disease and ample sanatorium provision. An interesting paper was read by Dr. Angus Macdonald, medical officer of health of Kingston, Jamaica, in which he concluded that while in the tropics some things were against them in regard to tuberculosis many were in their favour, and that tuberculosis should not exist in the tropics. The principal adverse feature was unsatisfactory home conditions, crowding, and lack of ventilation at night. Other papers were read by Dr. Hatton, of Grenada; Dr. Duke, of Antigua; Dr. Hutson, of Barbados; Dr. Tucker, of Bermuda; Dr. Ross, of Jamaica; Dr. Noc, of Martinique; Mr. Saunders, veterinary delegate of the Department of Agriculture; Dr. Godfrey and Miss Hohenkirk, of British Guiana; Dr. Hovenkampf, of Surinam; and Dr. Masson, of Trinidad.

NOTE ON A CASE OF

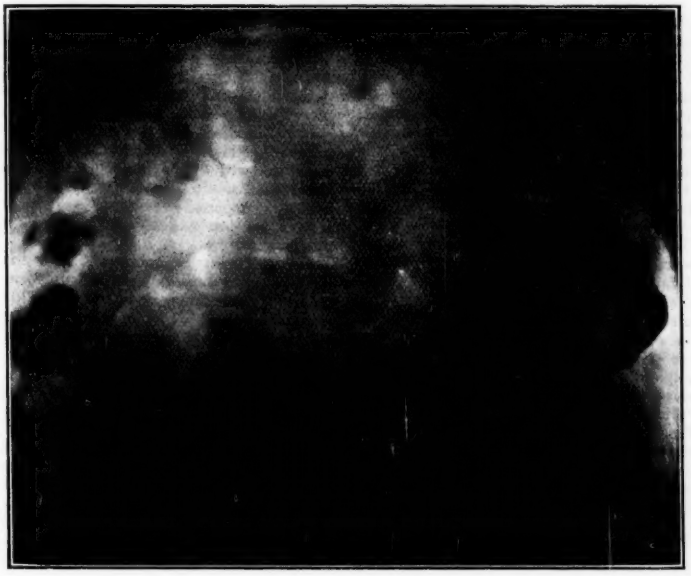
INCARCERATION OF THE CÆCUM AND ASCENDING COLON IN LESSER SAC OF PERITONEUM; OPERATION; RECOVERY.

BY IVOR BACK, M.A., M.B., B.C. CANTAB., F.R.C.S. ENG.,

ASSISTANT SURGEON TO ST. GEORGE'S HOSPITAL AND TO THE ROYAL WATERLOO HOSPITAL FOR WOMEN AND CHILDREN.

INCARCERATION and strangulation of the small intestine at the foramen of Winslow is rare enough, and recovery is rarer still, but I can find no record of any other case of incarceration of any part of the colon in the lesser sac. I think the following case is deserving of publication.

I saw the patient, a man, aged 41, at 10 P.M. on April 4th, 1913, with Dr. Henry Bazett. His history was that he had been wakened at 2 A.M. on that day with sudden, very acute pain in the right half of the abdomen, mainly above the umbilicus. He vomited at the time. The symptoms continued until 10 A.M., when the vomiting ceased and the pain was not so acute. He managed to get up and dress himself. He went to a chemist who gave him a black draught and advised him to call in a medical man. Soon after he had taken the draught the pain and vomiting returned and he was compelled to go back to bed. The pain was paroxysmal in nature, and each attack was more acute than the preceding one. The bowels had been opened normally on the morning of the 3rd, but neither flatus nor fæces had been passed since. He said he was usually rather constipated. He admitted to intemperance. He had never had an attack like this before, and his health had been good previously.



From a skiagram.

When I saw the patient at 10 P.M. he was obviously in great agony, writhing, throwing himself about in bed and crying for relief. He looked ill, with sunken eyes and an abdominal facies. He was sweating. His pulse was 125, temperature 96° F., and respirations 32. The tongue was furred. The abdomen was retracted and quite rigid and fixed on the whole of the right side. The left upper abdomen was also rigid but less so. The left iliac fossa was normal. No swelling could be detected. Per rectum nothing abnormal was felt. There were no abnormal physical signs in the lungs. While I was in the room he vomited 12 oz. of dark-green, bile-stained fluid. I made a diagnosis of acute appendicitis with perforation and peritonitis of the right half of the abdomen. I think now that his restlessness and writhing, combined with the persistent vomiting, should have made me suspect rather some form of acute obstruction. He was at once admitted to St. George's Hospital and I operated at 11.30.

Palpation under the anæsthetic revealed no abnormal mass in the abdomen. I made an incision 5 inches long in the right semilunar line over the appendix. It was at once obvious that there was no peritonitis. I could not find any trace of cæcum, appendix, or ascending colon. I enlarged the incision 1½ inches upwards, and under the margin of the liver just to the right of the middle line I felt a tense, pyriform swelling. I took this to be the gall-bladder. I made a second incision in the mid-line from the ensiform to the umbilicus and exposed the tense swelling I had felt. It lay between the stomach and the liver, and it appeared to lead down to the common duct. I still took it to be an inflamed gall-bladder. I passed a stay-suture through its wall with a view to incising it when gas came out having a fæcal odour. It was then obvious that the swelling was a knuckle of gut. The escape of gas reduced the size of the tumour and relieved the tension in the part. I closed the puncture in the wall with a purse-string Lembert suture. Now I could make out more clearly what the state of affairs was. The knuckle of gut was a portion of the ascending colon which had made its way into the foramen of Winslow and had been *followed by* the whole of the cæcum. It had then ruptured the layers of the gastro-hepatic omentum so that it lay under the parietal peritoneum. It was tightly incarcerated. In a few more hours it must have been strangulated by the portal vein and bile-duct. After the gas had escaped I was by great good fortune able to reduce this portion into the lesser sac, and then by pulling on the base of the cæcum to restore it and the ascending colon to their normal position. The cæcum was distended and its walls were very flabby—almost paralytic. It had a long mesentery which had enabled it to travel in this remarkable way. The appendix was normal. In view of the patient's general condition and of the state of the cæcal wall I did not think it advisable to take any steps to anchor the cæcum to prevent a recurrence. Both wounds were closed with fishing-gut sutures through all coats to save time.

Considering all things, the patient suffered remarkably little from shock. He actually slept four hours that night. His bowels were opened with an enema on the 5th and twice normally on the 6th. From that time his convalescence was uneventful. The wounds healed well and the stitches were removed on the 18th.

The skiagram was taken on May 1st, eight hours after the administration of bismuth. It shows the cæcum occupying its normal position. I saw the patient on May 14th and he said he was quite well.

The interest of the case lies in its rarity and the patient's happy recovery; the difficulty of making a satisfactory diagnosis to fit in with the clinical phenomena; and the fact that even when I had opened the abdomen I could not at first make out the exact state of affairs.

Wimpole-street, W.

ON THE POSSIBILITY OF ACHIEVING BY PARTIAL PNEUMOTHORAX THE ADVANTAGES OF COMPLETE PNEUMOTHORAX

IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

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VERY striking results have been reported following the induction of artificial pneumothorax.[1] Many cases which have resisted all other kinds of treatment have responded to this in a remarkable manner. The temperature has fallen and become steady, the cough diminished, the sputum decreased, and the cases have assumed an entirely favourable aspect in spite of the fact that, as a rule, only cases apparently hopeless have been treated. It need hardly be said that the object is to bring the treatment of the pulmonary affection into line with that of tuberculous disease in other parts of the body by imposing rest on the affected part. Such rest may be complete or partial, and the treatment is generally considered efficient according to the degree of rest obtained. Consequently, what is aimed at in inducing pneumothorax is the complete immobilisation of the affected lung, and only technical difficulties interfere with the attainment of this object.[2] It is clear, therefore, that according to this view the application of this method is limited to cases in which one lung can carry on respiration without being injured whilst the other lung is in a state of collapse. This is a very serious limitation, for, as a rule, the other lung is more or less affected, and although it frequently happens that both lungs improve, at other times the disease progresses in the functioning lung.

Again, there is a difficulty in maintaining a pressure sufficient to keep the lung completely immobilised. Pearson[3] gives a table of pressures in a typical case, which shows that even when 500 c.c. of gas are injected about every three weeks a negative intrapleural pressure returns which shows variations with inspiration and expiration equal to those registered before the induction of pneumothorax. Now when such variations of pressure occur we have the condition which causes the lungs to expand and contract with the respiratory movements, even though the lung is completely collapsed at the end of the expiration. Consequently, we cannot be sure of complete immobilisation of the whole lung unless we continuously keep a positive pressure in the pleural cavity.

What we have to consider in connexion with these limitations and difficulties is whether it is possible to substitute for complete collapse of the lungs such a partial collapse as would give rest in a differential manner to the diseased portions of one or both lungs. Reasoning and experiment show—and it will be convenient for the moment to limit ourselves to the case where one lung only is affected—that it is possible to achieve this by the introduction of a small volume of gas into the pleural cavity. Clinical evidence is forthcoming to confirm this and to show that it is a practical measure applicable to both sides, but this will be reserved for a future communication.

To appreciate what would be the effect of the introduction of a small volume of gas into the pleural cavity in a case where there is a focus of consolidation we require to have a clear idea of certain points in the physiology of normal respiration. We know that in the unopened chest the healthy lung, even at the end of expiration, is always in a state of elastic tension, and that this elastic tension must increase as the chest expands and the lungs dilate to fill up the increased space. It will be recognised that this elastic tension continuously tends to pull the visceral pleura away from the parietal, and that it acts in opposition to the muscles of inspiration. Again, we know that expiration is due to the contraction of the elastic tissue, but that it is regulated by the muscles of respiration. That the lungs are permanently in a condition of elastic tension is shown in the fact that when an opening is made into the pleural cavity air will rush in and the lung collapse immediately.

We may now inquire how such elastic tension is affected when a tuberculous focus is present in the lung. We know that at the focus, instead of elastic expansile tissue, we have a portion of the lung which has become an inelastic consolidated mass. It is clear that, notwithstanding that the lung may have embedded in it such an inelastic mass, the visceral pleura continues to be closely applied to the parietal during the respiratory movements. Hence the elastic portion of the lung along any axis which passes through the consolidated mass must be stretched along that axis to a greater extent, to compensate for the loss of elasticity in the consolidated portion of the lung. In other words, the elastic tension, and with this the resiliency of the lung, must be increased along such an axis.

Before passing on to examine the effect of pneumothorax on this condition of strain, it will be interesting to call attention to two physical features which the strain produces and which are disclosed by means of clinical methods. It frequently happens that an increased resonance on percussion is associated with the presence of a tuberculous focus in the lung. This indicates a certain amount of emphysema of the lung between the focus and the chest wall which is due to the increased strain imposed upon it. Again, such an increased strain tends to draw in the chest wall and the effect of this is seen in the flattening which is so frequent below the clavicle.

We may now pass on to consider how this elastic tension would be influenced by a pneumothorax induced by a comparatively small volume of gas. In such a case the visceral pleura does not lie in contact with the parietal throughout its whole extent, for the gas intervenes. When inspiration takes place those portions of the lung which remain normally expansile will dilate and tend to come in contact with the chest wall, while the displaced gas will find lodgment over the less expansile portions and prevent the increase in elastic tension which would be produced if the gas were not present.

The following experiment has been carried out to show that the lung does not expand uniformly in the condition of partial pneumothorax when consolidation is present. A small portion of a lobe of a rabbit's lung was consolidated by injecting a small quantity of fluid agar, and a cannula was inserted into the bronchus. The lung was then introduced into an air-tight chamber hollowed out of plasticine and closed in by a glass lid which allowed of the movements being watched. The bronchial cannula was made to pass out through the plasticine so that the air inside the lung communicated freely with the atmosphere. A second cannula was introduced through the plasticine into the chamber so as to allow of air being passed in and out. The chamber was now comparable to the pleural cavity in pneumothorax in which the pressure could be varied at will. When a negative pressure was produced the lung expanded, air passing through the bronchial cannula into the lung as in normal respiration. When the negative pressure in the chamber was relieved the lung collapsed, air passing out of the lung through the cannula. Now when the lung was in a state of collapse the consolidated portion bulged into the chamber, but when it was made to expand by causing a negative pressure in the chamber the unaffected portion expanded more than the portion superficial to the consolidated focus, and the position of this was finally indicated by a marked depression in the surface of the lung.

Thus the inference that the introduction of a small amount of gas into the pleural cavity prevents the lung in the region of consolidation being overstretched is fully borne out by the experiment. We see that an important advantage is gained by this. For whereas in the absence of pneumothorax the consolidated portion of the lung was stretched out with each inspiration in a line along which the expansile forces act, and was permitted with each expiration to return to its original shape, it would now remain continuously undistorted and at relative rest. We may realise more clearly what is gained by this when we consider what would happen where a pull is applied to a sponge filled in with colouring matter and placed in water. We should, if we undertook such an experiment, notice that colouring matter was with every pull driven out, and that the sponge filled itself up with fluid every time the strain was relaxed.

For the purpose of the foregoing exposition a single focus of consolidation has been considered. It is clear that the

[1] THE LANCET, vol. ii., 1911, pp. 145, 150, 153; vol. ii., 1912, p. 1642.
[2] Rist, in a Critical Review on Artificial Pneumothorax in the Quarterly Journal of Medicine, January, 1913, says: "The aim in pneumothorax therapy should be to produce a collapse and an immobilisation of the lung as perfect and as effective as possible."
[3] Brit. Med. Jour., Oct. 12th, 1912.

same reasoning would be applicable with each of several foci. In such a case more gas would be necessary, the quantity depending on the amount of lung tissue whose expansibility was diminished by consolidation; and, as in the case of a single focus, the more expansile portions will expand more readily than the rest and will displace gas which will find lodgment over the diseased foci. Therefore, whether the disease is extensive or not, the induction of a moderate degree of pneumothorax tends to diminish the distortion of the consolidated portions of the lung caused by the respiratory movements.

Consideration thus shows that what we gain by the introduction of a comparatively small volume of gas is a considerable limitation of the movements of the consolidated portions of the lung, and further, the prevention of the pumping action, which before the induction, by driving out tuberculous poison from the diseased foci, produced auto-inoculation.

In conclusion, we may consider the analogies existing between the conditions which are artificially established by partial pneumothorax and those which are spontaneously established by such a moderate pleural effusion as is so frequent an incident in the course of pulmonary tuberculosis. Except for its weight, such an effusion acts precisely in the same way as a gas. Consequently, where there is a tuberculous focus in the lung, such a focus may on the occurrence of a pleural effusion be brought to partial rest and auto-inoculation from it be expected to cease. Further, if the fluid were removed, the focus would again become subject to distorting forces and, in consequence, auto-inoculation would recommence and might cause an exacerbation of symptoms. Both these expectations are borne out clinically, and it is interesting to note that, if such an exacerbation follows, it becomes of diagnostic significance, inasmuch as it points to the presence of a tuberculous focus in the substance of the lung underlying the pleural effusion. Lastly, the rational treatment of such an exacerbation would be to introduce as much gas into the pleural cavity as would be sufficient to relieve the symptoms.

THE DIFFICULTIES OF TONSILLECTOMY AND HOW TO DEAL WITH THEM.[1]

BY JOHN F. O'MALLEY, F.R.C.S. ENG.,
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EVERY tonsil can be removed completely with its capsule by a properly modified guillotine, but some cases present certain difficulties. To make clear the details of technique in dealing with these difficult cases, it is first necessary to briefly describe the method used when operating in the simpler. The patient lies on the back close to the right side of the table, with a small pillow under the shoulders and neck. This causes the head to be extended. For the right tonsil the face is turned partly to the right, and for the left the face is moved back again to the middle line of the body. The operator stands on the right side of the patient, looking towards the head when removing the right tonsil, and towards the feet for the left. The right hand holds the instrument for both sides, and the right tonsil is removed first in all cases.

The tonsillectome is inserted through the mouth, with its outer aspect towards the tonsil (the reverse of the tonsillotomy method of application), and its lower edge is used as a tongue depressor to bring the lower pole of the gland clearly into view. (Fig. 1.) It is threaded on to the tonsil, and the latter is raised upwards and outwards as far as its mobility will allow, until it bulges the anterior pillar, whilst the handle is swung over to the opposite side of the mouth. The tonsillectome lies horizontally across the mouth at this stage, with its outer aspect upwards, and the tonsil lies on the periphery of the ring, over the opening, as seen in Fig. 2. In this position, owing to the pressure exerted outwards to keep the tonsil from slipping down again, the ring of the instrument gets frequently hitched under the tuberosity of the upper jaw, which prevents the anterior pillar being put fully on the stretch by the projecting tonsil. By getting the tonsil and pillar raised as far as possible, so that the ring of the instrument is clear of all bony points, the complete dislocation of the gland through the opening is greatly facilitated, and the risk of leaving portions behind is much diminished. To attain this object the handle is now still further depressed, and the ring end raised by withdrawing the whole instrument for a short distance. This has also the effect of rolling the free aspect of the tonsil well into view, and its junction with the anterior pillar can be readily seen for the clean insertion of the blade. (Fig. 3.) This manœuvre can be easily carried out in "mobile," but is difficult in "immobile" tonsils. The tonsil is next pushed through the opening with the left index finger or thumb (Fig. 4), and it usually gives a feeling of sudden loss of resistance like that felt on reducing a dislocation of the shoulder. The blade is now driven home against the leaded face of the ring, and both hands grasp the instrument to press it firmly and clamp momentarily what is practically the pedicle of a dislocated tonsil, as the more thoroughly this is done the smaller will the subsequent hæmorrhage be. Fig. 5 shows the depression (*a*) in the anterior pillar from which the tonsil and capsule have been dislocated. This is the area which is most prominent when the tonsil is raised, as seen in Figs. 2 and 3, and the point at which the buttonholing, referred to later, can occur. The whole instrument is next brought back to nearly the first position, as shown in Figs. 1 and 6, and then rotated sharply through half a circle around the long axis of the shaft, always towards the uvula, and finally withdrawn, bearing the tonsil on its inner aspect.

Before passing to the difficulties in detail I should like to point out that the method described above is not Sluder's. It agrees with it only in the application of the reverse or outer aspect of the instrument to the tonsil, and in the use of the finger for pushing the gland through the ring. In every other part of the technique it differs very materially, which will be soon obvious to anyone who reads and follows the diagrams in Sluder's original paper and Ballenger's description (in the third edition of his well-known text-book) of Sluder's method. While acknowledging my indebtedness to Sluder for the distinguished part he has taken in making tonsillectomy popular, I feel that it is necessary to raise this point on the question of terminology, as latterly it is becoming customary to refer to every variety of tonsillectomy done by the reverse application of the instrument as Sluder's, which shows either a lack of appreciation of important detail or knowledge of this surgeon's method.

Certain types of tonsil present difficulties to complete removal, and certain injuries to the soft parts are liable to occur until the operator has fully mastered the technique. They are as follows: (1) The left tonsil in all cases; (2) the very large tonsil; (3) the "immobile" tonsil; (4) the small, flat, friable tonsil; (5) the "pulpy" tonsil; (6) removal of the uvula; (7) buttonholing the soft palate; (8) removal of portions of the anterior pillar (palato-glossus muscle), either its margin along the centre or its lower end where it is inserted into the side of the tongue; (9) tearing the posterior pillar; (10) removal of portion of the pharyngeal aponeurosis; (11) tearing the mucous membrane over the point where the soft palate lies in relation to the hamular process of the internal pterygoid plate; and (12) hæmorrhage.

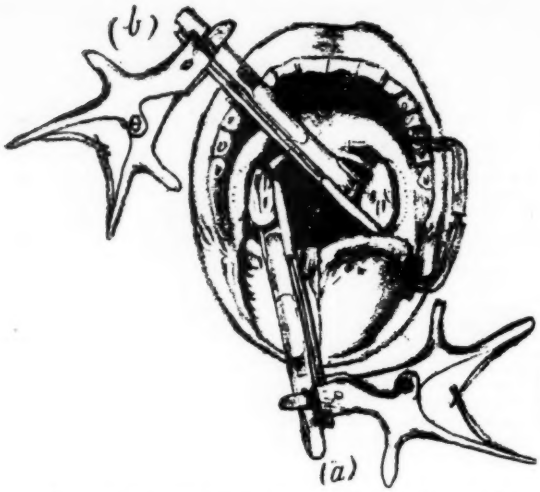
1. The left tonsil is a common source of difficulty to beginners, and this is due to the patient's face being rotated too much to the right side—that is, in the posture best suited for the more easy removal of the right tonsil. In this position the right cheek approaches the pillow and table, and these prevent the handle of the instrument being sufficiently depressed to raise the ring behind the tonsil, and partial removal is the result. After enucleation of the right tonsil, and before attempting to remove the left, the patient's face should be placed again in the middle line of the body.

2. The chief difficulty which the very large tonsil presents is due to its size in relation to the ring of the instrument. If both diameters of the opening are 13/16 inch it will be ample, as a tonsil nearly double this size can usually be pushed through it by the manœuvre described below under the removal of an "immobile" tonsil.

3. The "immobile" tonsil is usually medium-sized (but sometimes large) and embedded. It is firmly adherent by inflammatory bands to its bed—the pharyngeal aponeurosis—and to the faucial pillars, which accounts for its fixity. It occurs in about 10 per cent. of cases in children under 14 years of age, and more frequently in older patients, and is

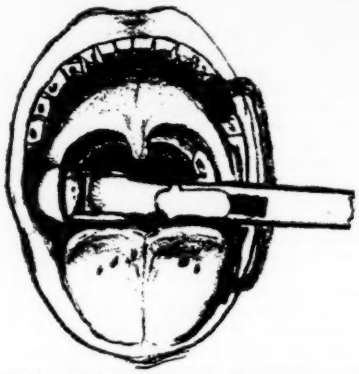
[1] A paper read before the Islington Medical Society on April 15th, 1913.

FIG. 1.



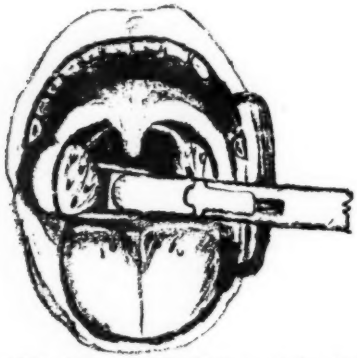
a) Shows the instrument in the first position, engaging the right tonsil. (b) Shows the same for the left tonsil.

FIG. 2.



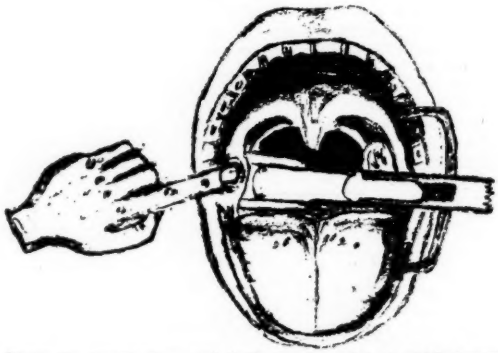
Shows the second stage of the operation on the right tonsil. The instrument is seen lying horizontally across the mouth and the anterior pillar perched over the opening. The periphery of the ring is in contact with bony points of the upper and lower jaw and may be hitched under the tuberosity of the superior maxilla.

FIG. 3.



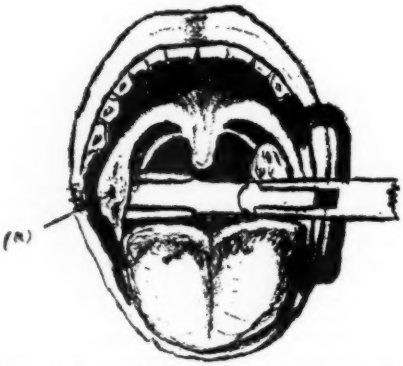
Shows the third stage. The whole instrument has been slightly withdrawn towards the left angle of the mouth, the free aspect of the tonsil is rolled more fully into view, the ring is freed from contact with, or fixation under, bony points, and the junction of the anterior pillar and tonsil is brought out distinctly for the clean insertion of the blade.

FIG. 4.



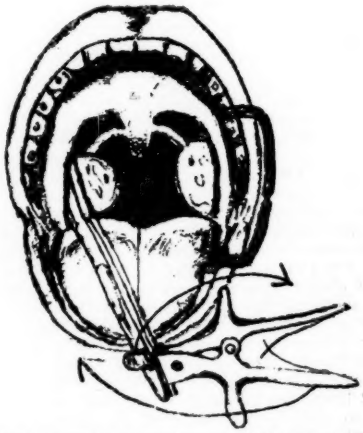
Shows the fourth stage and indicates the point at which pressure is applied by the left index finger or thumb for the purpose of dislocating the tonsil through the ring of the tonsillectome. The blade is not yet inserted.

FIG. 5.



Shows the blade inserted, the finger withdrawn, and the depression indicating the point at which the tonsil was most prominent in stage three, and where buttonholing is most likely to occur during the act of driving home the blade.

FIG. 6.



Shows the tonsil through the opening, the blade driven home, and the instrument lying obliquely in the antero-posterior plane of the mouth. At this stage there is a thin film of tissue lying between the leaded recess of the instrument ring and the edge of the blade, which the latter does not cut completely through. This tissue consists of the attachments of the capsule along its margins and of the blood-vessels entering the periphery of the tonsil. The upper arrow indicates the rotation of the instrument round its own long axis which is necessary to sever the film of tissue just mentioned. The rotation is always towards the uvula—namely, towards the operator's right for the right tonsil and towards his left for the left tonsil. The lower arrow is not correct.

exceptionally difficult to push through the ring of the instrument with the index finger. This tonsil and anterior pillar lie rigidly across the opening of the tonsillectome and are strikingly unyielding to the pressure of the finger. The ring of the instrument must be nearer the actual size of this tonsil than in any other type of case, but the 13/16 inch opening has been found sufficiently large in every instance. When this tonsil is removed the capsule will be found thickened and shreddy, so very unlike the usual smooth, glistening type. To enucleate in this case the ring is well pressed up behind the gland (the special merits of the small, solid ring become manifest here), and the instrument is slightly rotated from side to side, as if threading it on to the tonsil. The ball of the left thumb is now applied over the gland from without inwards, whilst the other fingers rest on the patient's cheek of the same side. The thumb can exert considerably more and wider pressure than the index finger, and pushes the tonsil through as a whole, as owing to its fixity by adhesions inversion of the capsule is much less likely to occur. With the thumb exerting steady, gradual pressure, the instrument is kept slightly rotating from side to side until the tonsil is through, and it is then removed as described above in the simpler cases. The sudden loss of resistance or "dislocation" feeling is rarely felt, as the tonsil and capsule are generally pushed through *en masse*, instead of the latter being inverted. As the anterior pillar is rigid from inflammatory infiltration, it is also friable and easily torn if care is not observed in exerting the thumb pressure.

4. The small, flat, friable tonsil. This type is sometimes associated with chronic otorrhœa, which is largely maintained by recurring nasopharyngeal infection, and therefore the complete removal of all septic lymphoid tissue in this neighbourhood is of considerable importance. These tonsils present a good deal of difficulty in the enucleation by dissection method, and not infrequently have to be removed piecemeal. Being flat and soft, they offer no resistance as one tries to thread the ordinary guillotine on to them, and the latter slips outwards and upwards to be stopped by the anterior pillar, but misses the tonsil. The inner upper margin of the tonsillectome must consequently be square (not bevelled), and capable of gripping and raising a fold when pressed against a flat skin or mucous surface. It is applied below the shelving lower pole of the tonsil and pressed firmly outwards and upwards, as far as the mobility of the gland will allow. The handle of the instrument is depressed, the gag slightly relaxed (if widely open) to slacken the faucial pillars, and the anterior pillar is now pushed towards the tonsillectome, carrying the tonsil before it into the ring, and is then removed as described above.

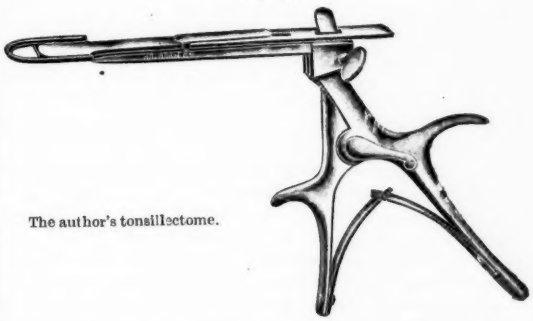
5. The "pulpy" tonsil. This tonsil is usually above the average size and occurs most commonly in children who would be classed as of a distinctly lymphatic type. It presents large crypts filled with grumous material, and the tissue is exceedingly pale, somewhat resembling in colour the exuberant granulations seen round the orifice of a tuberculous sinus. It is so soft and "pulpy" that when pushing it through the instrument ring (if the latter is decidedly smaller than the tonsil), this type of tonsil will burst and collapse under the pressure of the finger and all resistance suddenly ceases. I have met with it in about 2 or 3 per cent. of cases, and its clean enucleation with the capsule is always very difficult. When the tonsil bursts the pressure of the instrument forwards, towards the anterior pillar, and that of the finger on the soft palate, must not be relaxed, or it will be found almost impossible to re-engage the ring so as to include the base and capsule. By keeping the instrument and the finger still in their relationship to one another after the tonsil collapses, the blade can be guided beneath the anterior pillar by touch and enucleation accomplished.

6. Removal of the uvula. If the tonsillectome is introduced through the mouth on the flat instead of the edge, and the operator turns it outwards to engage the tonsil in the opening, the uvula is commonly caught over the upper margin of the ring, and is therefore easily included and removed. If the instrument is always inserted on its edge and applied to the tonsil in this position, and all the stages of the operation are carried out in full view, such an accident can never occur.

7. Buttonholing the soft palate may occur if the finger pushes the tonsil too far through the opening at the moment of inserting the blade. This injury is much more likely to happen when the blade is sharp and cuts into a slot than if the cutting edge is blunted and drives on to a leaded recess. I have seen this accident occur several times to operators who use an ordinary guillotine for tonsillectomy, and it adds considerably to the subsequent bleeding. When the tonsil is very fixed, as in the type referred to above as "immobile," decided pressure is necessary to make it enter the instrument, or otherwise the removal will be incomplete. Marked depression of the gland at the moment of inserting the blade will in these cases probably result in buttonholing, owing to the adhesions of the capsule to the pharyngeal aponeurosis and anterior pillar. This accident can be avoided by depressing the tonsil fully and freely through the ring, even carrying the finger well below the level of the blade, whilst still maintaining the pressure of the instrument around the periphery of the gland. This has the effect of partially dislocating the tonsil, and the controlling finger can be then relaxed to the level of the entering blade, which is now thrust home without any risk of damaging the palate.

8. Injury to the anterior pillar margin is due to the same error as in the case of buttonholing—namely, that of depressing the tonsil too much at the moment of inserting the blade. The lower part of the instrument ring is very liable to include the plica triangularis with the adjacent

FIG. 7.



The author's tonsillectome.

portion of the anterior pillar, if the shaft is not lying truly across the mouth, and the junction of pillar and tonsil is not clearly seen. To avoid this the tonsil should be raised clear of the tongue in the first stage, as seen in Fig. 1, and its free aspect rolled into view before inserting the blade as shown in Fig. 3.

9. The posterior pillar attachment at its lower end may be included with the lower pole of the tonsil if the instrument is pushed too far back on the lateral pharyngeal wall, and can be avoided by observing the strict rule of having a full view of all stages of the operation. It is also particularly liable to injury by the adenoid curette, which can pass so readily into the deep and empty sinus tonsillaris if carelessly or unskilfully introduced. With the patient lying in the lateral posture the right or lower posterior pillar is the one which is prone to this accident.

10. The pharyngeal aponeurosis is very thin in the sinus tonsillaris, and forms a loose connective tissue bed on which the smooth capsule of the tonsil glides. This gliding is quite noticeable in all "mobile" tonsils, but in the "immobile" the capsule and aponeurosis are attached more or less firmly by inflammatory adhesions, and it is, therefore, impossible to remove one without at least a portion of the other. There is no plan with which I am familiar to enable one to separate them in every case. I have never seen any ill-results follow the removal of a portion of the aponeurosis, and there seems no special reason why any should occur.

11. Tearing the mucous membrane over the hamular process is the result of depressing the tonsil too vigorously whilst allowing the instrument ring to be depressed at the same time, instead of keeping it raised forwards.

12. Hæmorrhage in my experience is strikingly small, as the actual loss during the operation in patients under the age of 14 averages only 3 drachms by weight in a large number of tests which were made. The subsequent bleeding was not in a single instance in well over 1000 cases severe enough to call for any special treatment or the retention of the patients in hospital after operation. I attribute

this very largely to the use of the tonsillectome, by which the vessels entering the periphery of the tonsils are first clamped and then torn across during extraction. On a later occasion I hope to deal more fully with this point (as there are many factors which influence the amount of hæmorrhage during the operation), but would like to add here that clean enucleations bleed least and cases with injury to the soft parts bleed most.

This list of difficulties and possible injuries may seem formidable, but they are no greater than those of enucleation by dissection in the hands of the inexperienced. Tonsillectomy, being an operation of precision requiring total removal, necessarily presents more difficulty than tonsillotomy, for which there is no standard of efficiency, the amount of tonsil removed in the latter varying with the case and the skill of the operator. The same type of injuries do, however, occur in the latter, though the risks of their doing so are not quite so great, as the operation is incomplete.

Weymouth-street, W.

Reviews and Notices of Books.

Manual of Tropical Medicine. By ALDO CASTELLANI, M.D. Florence, Director of the Clinique for Tropical Diseases, Ceylon; and ALBERT J. CHALMERS, M.D. Vict. & Liverp., F.R.C.S. Eng., Director of the Wellcome Tropical Research Laboratories, Khartoum, formerly of the Ceylon Medical Service. Second edition. With 15 coloured plates and 630 illustrations in the text. London: Baillière, Tindall, and Cox. 1913. Pp. 1747. Price 21*s.* net.

LESS than three years have elapsed since the first edition of this work was reviewed in the columns of THE LANCET. It is convincing evidence of the value of this book that the first edition should have become exhausted and that another should be called for in comparatively so short a time. It is generally admitted that in no branch of medicine has knowledge advanced so rapidly as in tropical medicine, fresh light being thrown almost daily upon one or another of the diseases of the tropics. It is therefore not to be wondered at that much new material has accumulated since the publication of the first edition of the "Manual of Tropical Medicine," and that the authors have had to increase the size of the book and add 500 new pages. Many new chapters have been written and most of the others have been altered or extended. Similarly the number of the illustrations has been increased from 373 to 630.

The main plan of the work has been retained, the material being arranged in three principal parts. Part I. is for the most part introductory, giving a short history of tropical medicine, and including chapters dealing with tropical climatology, tropical races, the effects of food and climate on man in the tropics, with some remarks on the endemicity and epidemicity of disease in various countries. Part II. treats of the causation of disease in the tropics under three sections—namely, physical, chemical, and parasitic: the last of these contains a large amount of new material, and includes the most recent discoveries. Part III., which constitutes about half of the book, describes in detail the various diseases met with in the tropics, classified under the headings of fevers, general diseases, and systemic diseases. The symptoms of each malady are carefully given, and the pathology, etiology, treatment, and prevention of each are fully considered. To every chapter is appended a list of references. A complete index of subjects and one relating to the various authorities referred to in the text form a useful addition to the volume.

In our opinion the new edition of this manual must prove of very great service to all who may seek assistance from its pages. We confidently recommend it to everyone who is interested in the maladies peculiar to the tropics.

Treatment after Operations. By WILLIAM TURNER, M.S. Lond., F.R.C.S. Eng., Senior Surgeon to the Dreadnought Seamen's Hospital, Greenwich, &c.; and E. ROCK CARLING, B.S. Lond., F.R.C.S. Eng., Surgeon to the Dreadnought Seamen's Hospital, Greenwich. With a chapter on the Eye, by L. V. CARGILL, F.R.C.S. Eng., Senior Ophthalmic Surgeon and Lecturer in Ophthalmology, King's College Hospital. London: Published for the University of London Press, Limited, by Hodder and Stoughton and Henry Frowde. 1912. Pp. 247. Price 10*s.* 6*d.* net.

THE value of the greatest care in the treatment of patients after operations is sufficiently shown by the issue of a number of works on this subject. The present authors describe the methods which they themselves have employed, and they have made no attempt to include other methods, the book being written almost entirely without reference to similar works. The result is a very practical book which cannot but prove of the greatest value in the daily work of the practitioner. It is especially in emergencies, in cases in which the usual treatment has been of no avail, that recourse is had to books. Thus, when a patient has troublesome vomiting after an operation, the medical man who is looking after the case wants to know, for instance, how to stop the vomiting, which is not only very trying to the patient, but also interferes seriously with the progress of the patient towards convalescence. In this book he will find what he wants. He will be told that the vomiting after operation may be divided into three degrees of severity: there is the vomiting which occurs as the patient is coming out of the anæsthesia; there is that form which occurs during the first day and night; and, thirdly, there is the more excessive variety which may last several days and may even threaten the life of the patient. Further, he will find a carefully detailed account of the method of dealing with each of these three forms. In a similar way all the other complications and symptoms which may occur after an operation are described. The nursing and dressing of patients after operations on different parts and organs of the body are dealt with in detail. The chapter on the Eye is good, and it supplies what is often wanting in works on surgery. Altogether the book will prove a valuable aid in the treatment of patients after operations.

A Text-book of Physiology. By ISAAC OTT, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Fourth edition. Illustrated with 434 half-tone and other engravings, many in colours. Philadelphia: F. A. Davis Company. 1913. Pp. 911.

A SUPERFICIAL look at this volume would hardly convey the impression that between its boards are over 900 pages. Its compactness is largely due to the excellent properties of the printing paper selected. The first edition was published in 1904, and the success of the work is shown by the issue of three subsequent editions. The author is well known for his physiological investigations, and we therefore find that this part has certain definite characteristics and special features. Amongst the latter is the relatively large space given to internal secretions, the treatment being considerably fuller and more up to date than in any other recent text-book. The Roentgen kinematograph, as recently developed by Kästle and others, is introduced, while the string-galvanometer and electrocardiograms of the heart and of the heart in Stokes-Adams disease find a place. Physiological technique in general, however, is not included, as the author rightly holds that it should be learned in the laboratory. A good number of the illustrations are taken from well-known authors—British and foreign—and their source is duly acknowledged. Some, such as those that are referred to Yeo, really only appeared in Yeo's text-book, and were

originally taken from a German author. Fredericq is consistently wrongly written as "Fredericque," and only occasionally do we find protein, the usual form being proteid. These, however, are small blemishes.

After the usual introductory matters, and in this connexion we think the author rather minimises the functions of ciliated cells, about 100 pages are given to digestion and 30 to absorption. Blood occupies about 60 pages. In addition to the usual information there is a short account of immunity, antitoxins, and Uhlenhut's test. It hardly seems necessary to reproduce Weber's scheme of the circulation. Respiration and circulation together occupy about 180 pages, and are treated on ordinary lines. There is a somewhat unusual fourfold grouping of secretion—as secretion by filtration, secretion proper, by glandular desquamation, and morphological secretion. The figure of a section of a suprarenal gland by Vailleton should be replaced by a more correct figure, and it seems hardly worth while to devote a whole page to the three small figures—not very illuminating figures at best—of a sweat gland. Under animal heat is recorded some of the author's own work on this subject. Muscles and electro-physiology are not overdone. Considerably over 100 pages are given to the nervous system. We miss, however, some important facts as to reflex action. We failed to find "the final common path," reciprocal innervation and other matters appertaining to reflex actions, though there is a reference to "antagonistic muscles." A short chapter on reproduction brings the work to a close. It might almost seem premature to introduce into a text-book Abderhalden's test for pregnancy. The illustrations might easily be replaced by better blocks.

This is a very readable and all-round view of physiology, with here and there its applications to practical medicine and pharmacology. It has also certain characteristics which are not usually found in purely English text-books. We wish the work every success.

Post Partum Normal. I-er Fascicule: Généralités, Organes Génitaux. Pp. 137. II-e Fascicule: Services d'Obstétrique Hygiène, Principes d'Asepsie. Pp. 150. Par CONSTANTIN DANIEL. Paris: A. Maloine. 1912.

IN the opinion of the author the puerperium does not in reality constitute a physiological state, as it is usually described, but represents a special state midway between pathology and physiology, comparable to the stage of convalescence after any general disease or to the stage of repair after a surgical operation. It is, therefore, often difficult to say when the border-line between the normal and abnormal is overstepped, but if clinical observations indicate that the various processes are taking place in a manner which experience has shown to be favourable, then the puerperium may be considered as normal. In order to distinguish clearly between what is physiological and pathological in the complex processes which are associated with the puerperium—for example, the process of involution in the genital organs—it is necessary to have a full knowledge of the anatomy and physiology of the normal puerperium. In these two volumes Dr. Daniel presents a detailed study of this important subject.

Vol. I. contains a description of the anatomy of the genital organs during the post-puerperal period which the author considers as extending to the end of lactation, and a clinical study of the various phenomena connected with this period—namely, the involution of the pelvic organs, the lochia, and the after pains. In the second volume the author expresses the view that the art of obstetric medicine has lagged behind in the progress which has been made in medicine and surgery. He calls attention to the heavy death-rate from septic diseases which still is associated with the practice of midwifery, and points out that for the successful practice of his art the obstetrician must have had as careful a training in asepsis and antisepsis as the surgeon, and must be as fully alive to the necessity of their employment in all circumstances. Only with such a training properly applied will it be possible for the practitioner to ensure a normal puerperium.

A Treatise on Diseases of the Hair. By GEORGE T. JACKSON, M.D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University; and CHARLES WOOD MCMURTHY, M.D., Instructor in Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University. With 109 engravings and 10 coloured plates. London: Henry Kimpton; Glasgow: A. Stenhouse. 1913. Pp. 366. Price 16*s.* net.

IN the preface to this volume it is stated that all the sections on anatomy, etiology, pathology, and bacteriology have been written by the junior author, and that both authors have endeavoured to place before the reader all that is known about the diseases of the hair and scalp. A book on this subject cannot nowadays claim much originality in research; at best it can but summarise the discoveries of Unna and the exhaustive work of Sabouraud. We are glad to note, therefore, that the authors frankly acknowledge their indebtedness to Sabouraud.

The book is divided into five parts. The first comprises the anatomy, physiology, and hygiene of the hair; the second part has 100 pages on the essential diseases of the hair; the third part contains chapters on the inflammatory diseases of the hair; the fourth part deals with parasitic diseases of the hair; and in the concluding chapters are described those diseases of the hair which are secondary to diseases of the skin. Under the essential diseases of the hair all forms of alopecia are described, including alopecia pityroides. It would have been more correct to place alopecia pityroides in the fifth class, as a disease of the hair which is secondary to pityriasis of the scalp. Throughout the pages on alopecia prematura symptomatica the words seborrhœa and pityriasis are employed loosely, as if connoting one and the same disease. On the other hand, in the last part of the book the distinction shown by Sabouraud is very closely adhered to—pityriasis simplex and steatoides being carefully distinguished from seborrhœa. Yet the succeeding section, which describes the inflammatory condition frequently underlying pityriasis steatoides, is labeled dermatitis seborrhœica. Thus once more is proved the confusion of nomenclature still existing in dermatology, for it is acknowledged in the text that this form of dermatitis (seborrhœic dermatitis) may exist without seborrhœa. The sections on ringworm and favus are very thorough. The authors claim that in no other book, excepting those of Sabouraud, will be found so complete a presentation of what is known about ringworm and favus as in this. Although such intricate knowledge is only rarely of use for an individual case, it may be of great practical importance where an epidemic is spreading. The illustrations are very good, but out of the 109 no fewer than 53 are taken from Sabouraud. In Fig. 2 a curious error is noted—the cuticle of a hair is labeled as the medulla.

So far as we are aware there is no English volume of any size dealing exclusively with the subject of hair diseases. The works of Sabouraud, "Les Maladies du Cuir Chevelu" and "Les Teignes," are not translated, and are too lengthy for the practitioner. This work, therefore, will be of practical use. Its paragraphs on diagnosis are complete, and the prescriptions given throughout the book have passed the test of recommendation after trial by Dr. Jackson and other dermatologists.

Conférences sur les Accidents du Travail et les Affections Traumatiques. Par le Dr. OLIVIER LENOIR, Ancien Interne des Hôpitaux de Paris; Lauréat de la Société de Chirurgie; Médecin Principal de la Compagnie Paris-Orléans. Paris: Vigot Frères. 1913. Pp. 214. Price 3.50 francs.

Dr. Lenoir's discussion of subjects familiar to the minds of British medical practitioners in connexion with workmen's compensation would have gained in interest for our readers if the author had not passed over all that has been, and is being, done in these islands. He has contented himself with comparisons with German legislation and German practice when illustrating his observations with examples from abroad. Familiarity with the law and medicine of two foreign countries cannot be insisted upon, and our reason for regret at the lack of reference to our own law is not that from patriotic motives we resent being ignored, but because Dr. Lenoir would, we are sure, have found much to interest him in the attitude of the law of Great Britain upon the particular aspect of accidents to workmen with which he principally concerns himself.

Passing from the general consideration of accidental injuries and of industrial diseases, he turns his attention to the previous condition of the injured workman with reference to the obligation of the employer to compensate him for an accident. He goes thoroughly into the question of how far this condition is material. In particular he discusses accidental injuries of a slight character in themselves, but serious when coinciding with physical conditions of not uncommon occurrence. Hernia ascribed to an "accident" and traumatism in connexion with tuberculosis, syphilis, and cancer, are discussed by the author from the point of view of one who desires to see the liability of the employer limited to the reasonable consequences flowing directly from an accident. He considers that conditions due to a disease aggravated or set up, or possibly alleged untruly to have been set up, by some trifling accidental injury should not be a subject for compensation by an employer who by chance has engaged a workman without ascertaining the state of his health. He urges that occurrences of this class would more properly be provided against by a State system of industrial insurance especially adapted to meet them. If Dr. Lenoir had had at his disposal the cases decided under our Workmen's Compensation Acts it would have interested him to observe how the English courts administering those Acts have ignored the effect of conditions of disease as physical predisposition on the part of the workman in saddling the employer or his insurers with responsibility for "accidents" which no precaution could have avoided except that of rejecting the workman upon his application for employment. The opening 25 pages of "Knocker's Digest of Workmen's Compensation Cases" would supply Dr. Lenoir with plenty of examples of this.

Another aspect of syphilis in its relation to the liability of the employer, besides that of its effects in increasing the seriousness of slight injuries, is discussed by the author under the heading of Glass-blowers' Syphilis (Syphilis des Verriers). The tube used for blowing glass, where no mechanical means are used, is passed from mouth to mouth by a boy, and by two workmen of successive grades, all these applying their lips to it in one operation of blowing. The favourable opportunities thus offered for the spreading of the disease, if it exists in the workshop, need not be dwelt upon, but Dr. Lenoir, who has a lawyer's desire to see liability attach where it should justly be attributed, points out that, apart from the question of the employer's duty to enforce sanitary precautions, there must always be a difficulty in proving the presence of syphilis in the workshop, and of attributing any case of mouth infection to this rather than to some other cause. He also suggests that the abrasion, without which infection cannot take place, is not an accident if it is due to the ordinary performance of an every-day duty and not to any special risk affecting the person injured.

Dr. Lenoir's book contains much interesting and suggestive matter and a useful bibliography of foreign literature relating to the subjects indicated.

Glandes Surrénales et Organes Chromaffines. Par M. LUCIEN, Professeur Agrégé, Faculté de Médecine de Nancy; and J. PARISOT, Chargé des Fonctions d'Agrégé de Médecine, Nancy. Avec 100 figures dans le texte. Paris: F. Gittler, Société d'Éditions Scientifiques et Médicales. 1913. Pp. 453.

THE use of a general title, "Les Glandes à Sécrétion Interne—Anatomie, Physiologie, Pathologie," leads us to suppose that this volume on the suprarenal glands is the first of the series. It is divided into four parts, the anatomy, physiology, general pathological anatomy of the suprarenal glands, and lastly, about 100 pages are given to the suprarenal symptoms in pathology. First, a short account is given of the comparative anatomy and histology of the glands from mammals to fishes, their development, and the penetration of the chromaffin elements into the cortical layer, and the final organisation of the mammalian gland. The histology and histo-physiology are described in considerable detail, as well as the changes in structure during various physiological conditions, such as muscular work, inanition, gestation, and hibernation, and the condition of the gland at different ages in the human subject is also described. The question of accessory suprarenals and the chromaffin organs in all vertebrates brings the first part, extending to nearly 100 pages, to a close.

Part II. deals with their physiology. French authors are rather fond of the term "insufficiency," and we meet it often in this work. The effects of unilateral or bilateral excision in various species are described and analysed; the effects of injecting extracts and grafting are formulated; the chemiobiology of the gland, its lipoids, pigments, chromogens, and, above all, adrenalin, are fully described, and the effects of adrenalin are illustrated by several blood pressure and other tracings. The experimental production of atheroma, as first shown by Josué, is very fully discussed—an action called by the authors "atheromatogenic." The action of adrenalin on other systems besides the vascular system and on general nutrition, including adrenal diabetes, is next considered. This leads up to the question as to the part these organs play in the defence of the organism and their assumed or so-called antitoxic function. The authors claim for them a very wide, far-reaching rôle in the economy.

The third part, about 80 pages, dealing with pathology, is complementary to the previous parts. It is succinct and is illustrated by several figures, naked-eye and microscopical. To the practitioner Part IV.—over 100 pages—dealing with the group of symptoms associated with, or assumed to be associated with, various forms of disease of the adrenals, will be the most interesting. Here, however, much is obscure, and much remains to be observed clinically and correlated with pathological facts. The authors give an excellent summary of the present state of our knowledge on this obscure subject, in which are introduced such little-known diseases as progeria, the malady of Guinon and Bijou—i.e., hirsutism, sometimes called by the French "syndrome surréno-génital." Unfortunately there is no index and no bibliography. The latter is greatly to be regretted, for the reader is thus merely supplied with names, and is unable to verify the statements or to extend his knowledge by reference to the original memoirs.

The work is a very readable summary of the present state of our knowledge on a subject obviously of great theoretical and practical importance.

Handbuch der Pathogenen Mikro-organismen. Herausgegeben von Dr. W. KOLLE und Dr. A. W. WASSERMANN. Second, revised, edition. 16 Parts. Jena: Gustav Fischer. 1912 and 1913. Price 5 marks each part.

WE have before us a number of new parts of the second edition of this enormous work, and may say without reservation that these parts maintain the high standard set by the earlier numbers. The discussion of the subject of immunity and allied matters is continued, completing the second volume. In the third volume, which is now commenced, the subject of the value in diagnosis of agglutination, bacteriolysis, and the fixation of the complement is considered. In the portion of the fifth volume contained in these parts we have an account of the use of the tuberculins, a description of the organisms causing leprosy, diphtheria, glanders, the soft chancre, and rhinoscleroma. We may also mention a very full account of the bacillus pyocyaneus. Two of the sections contain portions of the seventh volume, which treats of the pathogenic protozoa. The volume begins with a good description of the protozoa in general, and the organisms causing malaria, dysentery, and coast fever are described. A single fasciculus treats of the larger parasitic animals, which are described in the eighth volume; those described here are the bilharzia, ankylostoma, and the trichina. We have said enough to show how fully the subject is treated.

Technique Microscopique, d'après Böhm et Oppel. Par E. DE ROUVILLE. Cinquième édition considérablement augmentée. Paris: Vigot Frères. 1913. Pp. 724. Price 8 francs.

THIS practical, comprehensive, and well-arranged "Taschenbuch," which has reached its seventh edition in German, has already an established reputation. The French edition, "inspired" by the German edition, is the fifth edition now before us. We have compared this edition with the seventh German edition, edited by Oppel, for his co-editor Böhm died in 1912. The French edition takes as its basis the German work, but it does not exactly follow the parent text, which has been altered and added to here and there.

There is an introduction on the microscope, illustrated by figures, and a new chapter on the ultra-microscope. The French, like the German, edition consists of two parts, of which one is general, and deals with the technique, and the other is special, in which the methods applicable to the preparation and examination of the several tissues and organs are considered. In fact, there are almost too many methods to select from. The work possesses all the details of the German edition, but in addition there are added a number of methods that are employed more especially in French laboratories, so that it will be found most comprehensive in its scope. The bibliography also is more extensive than in the German edition in consequence of the introduction of references to the papers more especially of French histologists, but in the main it follows the German "Literatur-Verzeichnis," which extends to over 30 pages. It is rather odd to find both in the German and the French editions the well-known name of Lockhart Clarke appearing as "Lakhart (Clarke) 1857." We would direct attention to the very full account given under "Adipose tissue" of the fats and lipoids.

We have great pleasure in recommending this inclusive compilation of microscopical technique as applied not only to human organs and tissues, but also to those of both the lower and the higher animals. It is a most useful, handy, and up-to-date compendium.

MISCELLANEOUS VOLUMES.

NUMEROUS books for the instruction of laymen reach us for review, of which we can only notice the best and most responsible.

A Medical and Surgical Help for Shipmasters and Officers in the Merchant Navy, including First Aid to the Injured. By W. JOHNSON SMITH, F.R.C.S. Eng. This, the fourth edition, has been revised by Dr. ARNOLD CHAPLIN, Medical Inspector to the Peninsular and Oriental Steam Navigation Company (London: Charles Griffin and Co. 1912. Pp. 355. Price 5*s.* net.).—Recent advances in the knowledge of the causation of diseases, especially of those due to tropical conditions, have led to this revised edition. Portions of the book have been rewritten, and the new scales of drugs and medical and surgical appliances issued by the Board of Trade in January, 1912, have been incorporated, and in some other respects the work has been brought into line with the present-day requirements. The reviser has not felt the necessity of altering the chapter dealing with surgical matters. While it is true that in the greater portion of this section it would be impossible to improve upon the clear descriptions and admirable advice contained therein, it is to be regretted that in the section on first aid to the injured the opportunity of a new edition has not been taken to improve on the treatment of the apparently drowned. There is no word of Schäfer's method of artificial respiration, which may be said to have largely replaced the older methods of resuscitation from drowning. The woodcuts accompanying the description of the methods of performing artificial respiration give to the section a mediæval look; these directions for restoration of the apparently dead and drowned should not be in use by the Navy or in lighthouses and vessels of Trinity House. We have little other criticism to offer. The first chapter, which deals with the preservation of health on board ship, is full of good and sensible advice, which, if it were all acted upon by owners and masters, would certainly reduce the present serious risks to health which are entailed by a seafaring life in close quarters on iron ships. The chapters on the recognition and treatment of disease are full, safe, and accurate, and should be of much assistance to masters in the difficult circumstances in which they are often placed. The book is also an admirable guide to treatment when the disease has been recognised and help sought under the appropriate heading. But how often is not the chief difficulty the diagnosis of a feverish illness? The volume would have been improved by a chapter on the treatment common to all pyrexial disorders.——Dr. A. H. DOTY, who has written a useful little book, *Prompt Aid to the Injured* (London and New York: D. Appleton and Co. 1912. Pp. 229. Price 6*s.* net.), was lately Health Officer of the Port of New York. The purpose of this book is to provide instruction for the intelligent layman as to what he should do in cases of accident or injury, and its value is attested by the fact that the work is now in its fifth edition. The writer has made every effort to introduce material of practical importance, not only in connexion with medicine and surgery, but also as regards modern sanitation, so as to make the book of value not only for domestic use but also for use in mining districts, manufactories, and other places where many persons congregate and accidents frequently occur. The elementary characters and functions of the skeleton, joints, muscles, blood, respiratory and other systems of the body are explained in concise and popular terms, and the line of action best suited for rendering first aid in hæmorrhage, fractures, burns, unconsciousness, asphyxia, drowning, poisoning, and suchlike as may from time to time present themselves is detailed. The last two sections of the book deal with hygiene and sanitation, and

embody many suitable and useful hints. The book is well got up and there is a good index.

If medical books for laymen are frequent, semi-popular works upon social economy are still more so. Everything that Prince Kropotkin writes is of interest as the work of a man who is transparently honest and wholehearted, if possibly somewhat of a visionary. But most of the great reforms in this world have been set on their way by visionaries. *The Conquest of Bread* (London: Chapman and Hall, Limited. 1913. Pp. 298. Price 1*s.* net.) was first published in 1906, and in it Prince Kropotkin expounds his theory of well-being for all, a much-to-be-desired state which is to be brought about by expropriation and intensive culture. All revolutions, he says, have failed hitherto because the workers could not get enough to eat and the watchword of the future revolution will be "bread for all." Prince Kropotkin's account of the really communistic and anarchistic revolutionary city is quite fascinating in its details, but is at present, it seems to us, Utopian. If all men were as simple, honest, and unselfish as Prince Kropotkin the scheme might be possible. At present, however, the majority of us are far from possessing such characteristics. But at any rate, the world is slowly getting better, although poverty selfishness, and violence are still too much in evidence.—— A more hopeful picture is a very bright and charming portrayal in *Halfpenny Alley*, by MARJORY HARDCASTLE (London: Smith, Elder, and Co. 1913. Pp. 239. Price 5*s.* net), of the life led by our less fortunate brethren. It presents the lighter side of the picture of struggle and toil and hardship in the life of east and south-east London, the life with which the inhabitants of the west are for the most part familiar only in the tragic or pathetic events that bring it for a moment to the surface through the newspaper reports. Six years of nursing in east and south-east London have enabled Miss Hardcastle to demonstrate that, gloomy as the picture is in some respects, it has a brighter side which is at least as predominant as it is in the upper world. Indeed, it is likely that the prevailing practice of making the most of small things and of exacting the greatest amount of happiness from the merest trifles places the denizens of these less fortunate regions on quite as high a plane, to say the least, in respect of character as those who seem to have so much more to be thankful for, so much less to endure. As Mr. Alexander Paterson, who writes the introduction, says: "Because streets are a bit narrower, or houses seem dark and untidy, the life within them is often conceived as one of perpetual strain and misery. Too little allowance is made for those many brave joys which even dirt and hunger cannot choke. ..... The streets may be dark, but their very gutters brim with happiness." This book should be read by all who do not live near "Halfpenny Alley" less perhaps that they may learn about its inhabitants than from them.

We may conclude this brief account of many books by some notes on a few works of reference. The third issue of the *Edinburgh University Medical Year-Book, 1913*, by DUNCAN C. L. FITZWILLIAMS, M.D., Ch.M., F.R.C.S. Edin. & Eng. (Edinburgh: The Darien Press. Pp. 254), which made its first appearance in 1911, will be welcomed by Edinburgh students all the world over. It contains much useful and interesting information about the University medical curriculum, and particularly about its post-graduate courses. There is also a list of the Edinburgh resident and non-resident posts open to graduates, with much other University information concerning Fellowships, scholarships, and bursaries, the professorial and Royal Infirmary staffs, the Royal Medical Society, the O.T.C., the Undergraduates' Club, the Women Students' Union, and the Edinburgh Graduates' Clubs in different localities. The alphabetical list of Edinburgh University medical graduates occupies pages 89 to 206, while the local lists complete the volume to p. 254. There are illustrations of the University and portraits of Lister, Annandale, Caird, and Lorrain Smith. Professor F. M. Caird writes a very appreciative account of Lord Lister, while Dr. Fitzwilliams does the same for the late Professor Gibson, and Dr. W. Mair a similar account of Professor Lorrain Smith, who recently succeeded Professor Greenfield in the chair of pathology.—— *Burdett's Hospitals and Charities, 1913*, by Sir HENRY BURDETT, K.C.B., K.C.V.O. (London: The Scientific Press, Limited. Pp. 1047. Price 10*s.* net), which is now in its twenty-fourth year of publication, scarcely needs any detailed description. It forms a reliable guide to the *personnel*, finance, equipment, and so forth, of hospitals, medical schools and colleges, nursing and convalescent institutions, sanatoriums, and dispensaries, and contains, besides alphabetical lists of some 6000 institutions, a large amount of information with regard to public charity in the cause of sickness and suffering and the public funds which collect money for hospitals. A chapter is devoted to British hospitals and the National Insurance Act, and in the preface Sir Henry Burdett expresses the conviction that "speaking from an intimate knowledge of facts, we feel justified in saying that the overwhelming majority of opinion among all classes in Great Britain is that the voluntary system of hospitals must be maintained and extended upon wise lines," securing the "continuance of a system of administration which, on the whole, is undoubtedly the most perfect in the world."——The *Social Guide, 1913* (London: Adam and Charles Black. 1913. Pp. 264. Price 2*s.* 6*d.* net), edited by Miss HUGH ADAMS and EDITH A. BROWNE, is now in its fourth year. It gives a great deal of information, in alphabetical order, about the public social functions and social societies in London, including provincial and county associations, with financial, dress, and other regulations. We suppose the International Medical Congress, which meets this year in London, is considered too professional for inclusion, yet the social element will be as prominent here as it is at the British Association, which is included; while the cure resorts, British and foreign, to which paragraphs are devoted, still manage to retain more than a vestige of professionalism, in spite of the dominance of fashion. We should also have thought the Imperial Services Exhibition quite as worthy of mention as the skating rinks. The fact that the *Guide* is not published until May renders reference to the Oxford and Cambridge boat race, the Chelsea Arts' Club ball (February), St. Patrick's Day, and some other events, belated. However, the book is a useful one.

DONATIONS AND BEQUESTS.—The Chelsea Hospital for Women has received from the Drapers' Company a promise of £500 towards the rebuilding fund for the current year and of a similar amount for 1914. A bed will be endowed in the name of the company.—Among others, the following bequests have been made under the will of the late Mr. Alfred Hugh Harman, of Haslemere. The freeholds on the Southville Park Estate, Dulwich, S.E., for the use of King Edward's Hospital Fund for London; to the Three Counties Nursing Association, Shottermill, Surrey, £1000 Debentures of Drummond Brothers (Limited), and shares in the Associated Portland Cement Company (Limited), the Grayshott Refreshment Association (Limited), and Messrs. Chapman, Lowry, and Puttock (Limited); to the Haslemere Cottage Hospital £1000 Debentures, together with Preference shares in Drummond Brothers (Limited); £5000 each to Dr. Barnardo's Homes and the City of London Hospital for Diseases of the Chest; £2000 to the British Home for Incurables, Streatham; and £1000 each to the After-Care Association, the Royal Association in aid of the Deaf and Dumb, and St. John's Hospital, Leicester-square.

THE LANCET.

LONDON: SATURDAY, JULY 5, 1913.

"Sensitised" Vaccines.

IT is common knowledge that after recovery from certain infections the infected organism may acquire immunity from a subsequent infection by the same virus. That such protection can be artificially conferred on animals and human beings by means of vaccination was demonstrated by JENNER and PASTEUR. Vaccination against small-pox still occupies a fore-place in the domain of protective active immunisation in that not only is a high degree of immunity thus artificially produced, but this state persists for a number of years; further, the actual vaccination is attended by but ephemeral discomfort and is certainly, under ideal conditions, devoid of risk. The wider application of active immunisation to the prophylaxis of infective diseases has been the goal of many latter-day scientific researches, and, indeed, these attempts have not been wanting in success. The prophylactic inoculations with killed cultures (vaccines) of typhoid and plague bacilli have led to a notable diminution in the case incidence and mortality amongst the inoculated. The basis of such inoculations is founded on well-studied scientific facts, for the elaboration of specific protective substances in the blood, directly resulting from such inoculations, can be actually demonstrated and measured. It cannot, however, be gainsaid that the inoculation of both typhoid and plague vaccine is attended in many cases by reactions of some severity, that during the initial stages of the immunising process the inoculated individual is more prone to infection, and that the immunity conferred only lasts for a variable period. Further, it must be granted that the number of infections against which such protective inoculations are effective is limited. EHRLICH and MORGENROTH have shown that if bacteria are brought into contact, at body temperature, with a serum containing specific antibodies, the bacteria unite with their own specific antibody and with this antibody alone. In such a mixture of bacteria and serum containing specific antibody, the bacteria thus "sensitised" can be readily separated from the serum by centrifuging. Now, it occurred to BESREDKA to inquire whether such "sensitised" bacteria could be used with advantage as immunising vaccines. Applying himself to the study of prophylactic inoculation against typhoid fever, BESREDKA showed that animals inoculated with "sensitised" typhoid vaccine acquired a high degree of immunity without exhibiting any signs of a local or general reaction, and that the immunity supervened very rapidly and lasted for a considerable time. BESREDKA concluded from his researches, which have received confirmation at the hands of MARIE, REMLINGER, DOPTER, and THEOBALD-SMITH, that the "sensitising" of bacteria in this way conferred new properties on them which rendered them fully effective and inoffensive as vaccines, the resulting immunity being certain, rapid, and lasting.

A further development of BESREDKA'S researches was realised when he and METCHNIKOFF contemplated the possibility of immunising anthropoid apes against typhoid. These apes are very susceptible to typhoid infection, and METCHNIKOFF and BESREDKA were unable to protect them against an infecting dose by vaccination with dead bacilli (vaccines) or extracts of bacilli. But, by using "sensitised" *living* bacteria they succeeded in protecting the apes against a lethal dose and were able to show that the introduction of such living "sensitised" bacteria was not only harmless, but that all febrile and even local reactions were thus avoided; and yet the immunity conferred was experimentally undeniable. It is not surprising that a number of individuals have devoted themselves to the further study of this method of active immunisation both in its application to prophylaxis and also to therapeutics. In the continental medical literature a number of encouraging reports have been published on the value of the method in the preventive and curative treatment of plague, cholera, typhoid, dysentery, streptococcal and pneumococcal infections, tuberculosis, rabies, and poliomyelitis. A notable contribution to this aspect of the treatment of certain bacterial infections was afforded by the interesting paper published in THE LANCET of June 28th by Dr. M. H. GORDON. Dr. GORDON pointed out the disadvantages of the ordinary specific methods of treatment by immune serums and vaccines respectively. Immune serums not only sometimes give rise to anaphylactic shock or serum sickness, but also with certain notable exceptions they have proved disappointing in practice, while with vaccines the well-known negative phase constitutes a risk which is by no means negligible in some cases. It appears to be established that the sensitisation of vaccines by the method of BESREDKA marks a notable advance in the specific therapy of infective diseases. The method was first introduced by him as long ago as 1902, and in the interval which has now elapsed a mass of evidence has accumulated which demonstrates that sensitised vaccines can actually save the life of an animal which has been infected with a fatal dose of the corresponding micro-organism. It has also been established that the process of sensitisation diminishes the toxicity of a vaccine without lessening its immunising properties; indeed, it would appear that if adequate doses are given at proper intervals the production of immunity is accelerated, and that there is no negative phase or diminution in the animal's specific resistance. At first sight it would appear almost paradoxical that a vaccine treated with immune serum should at the same time be made less toxic and more active. The explanation offered is that during sensitisation the bacteria become coated with agglutinin and opsonin, and that, therefore, when injected they are more readily taken up by cells such as the polymorphonuclear leucocytes, in which they undergo lysis, so that their endotoxins are set free in a manner specially favourable for the production of antibodies.

Dr. GORDON gave brief records of a number of cases of streptococcal infection treated by means of sensitised vaccines, and, as can be seen from his careful summary of

his results, they are such as to be distinctly encouraging. He suggested that the method may have a great future, not only as a scheme of treatment of infections already established, but as a prophylactic agent in epidemics. His paper should be read by all who are anxious to keep in touch with the advances in the specific treatment of bacterial infections.

The Cumulative Character of the Evidence for Vaccination.

IT may be remembered by our readers, for we notified the fact at the time, that the Upper House of the Manx Legislature, to which a measure for the admission of conscientious objection to vaccination had been sent up from the Lower House, after hearing witnesses on both sides, without a dissentient threw out the Bill. It is a significant thing that, whatever action has been adopted on grounds of policy, in every case in which a body representing official or governmental authorities has taken evidence concerning the value and efficacy of vaccination—whether our House of Commons in 1802, the Danish Legislature in 1804, the Royal College of Physicians of London in 1807, the German Vaccination Commission in 1886, the Royal Commission on Vaccination in 1896, the Manx Legislative Council in 1913—the report of that body has been favourable thereto. And now to this list must be added yet another, that of the Pennsylvania State Medical Commission, appointed in June, 1911, whose report has recently been issued. The scope of the investigation was a very wide one. It included an inquiry into the history, nature, and pathology of small-pox, the means that can be used for diminishing the prevalence of and mortality therefrom, the history, nature, and pathology of vaccination, the original sources from which the various strains of vaccine now in use have been obtained, the methods of procuring, sterilising, preserving, storing, and distributing the vaccine, the veterinary inspection of the animals used in its production, the effect of vaccination on the mortality from small-pox, the objections to vaccination based on alleged injurious effects and the investigation of specific instances of death or other serious injury adduced as being due to vaccination, the existing Acts, statutes, and legal decisions governing vaccination and the preparation and sale of vaccine, with a consideration of any objections raised thereto. The Commission was composed of two scientific men holding the accepted views concerning vaccination—viz., Professor WILLIAM H. WELCH, of Johns Hopkins University, Baltimore, and Professor JAY SCHAMBERG, of Philadelphia; two antivaccinationists—viz., JOHN PITCAIRN, President of the Antivaccination League of America, and PORTER F. COPE, its secretary, neither of them medical men; and three neutrals—viz., M. EMIL ROSENBERGER, attorney-at-law, Mr. HENRY C. LIPPINCOTT, life insurance company manager, and Mr. EDWARD A. WOODS, president of an insurance agency.

As the report is lengthy, the signatories summarise their conclusions on the evidence as follows: 1. The protective power of vaccination against small-pox has been conclusively established. Successful vaccination protects against small-pox for a period averaging seven to ten years. Protection may be renewed on the exhaustion of the immunity by a second vaccination. Persons twice successfully vaccinated are usually immune against small-pox for life. Persons vaccinated in infancy but not revaccinated, on contracting small-pox in later life have in the aggregate less severe and fatal attacks than unvaccinated persons. 2. Vaccination is a relatively harmless procedure, serious vaccinal injuries constituting but a minute fractional percentage, and being nearly all the result of preventible secondary infections. Vaccination is safer now than ever before. The use of glycerinated lymph in sealed capillary tubes is a distinct advance. Examination is thoroughly performed in America. The number of alleged vaccinal injuries has been greatly over-estimated. 3. There is no available substitute for vaccination in the prevention and suppression of small-pox epidemics. 4. The legal school age offers an opportunity of establishing official supervision over the vaccinal condition of the people and applying its benefits. 5. This report is in harmony with the reports of all the official and Governmental Commissions that have considered this subject. The medical witnesses who testified before the Commission in favour of vaccination numbered 25, and were mostly men of acknowledged professional pre-eminence and of wide experience and opportunity for observing practically the effect of vaccination. The antivaccination medical witnesses were five in number, and included Dr. CHARLES CREIGHTON, the well-known English historian of mediæval diseases, three medical practitioners, and a homœopathic physician who is honorary vice-president of the Antivaccination League of America. It goes, of course, without saying that the two antivaccinationists did not sign the report, but there is a long dissenting report by Mr. PITCAIRN, which is assented to in a few words by Mr. COPE, the other antivaccinationist. What is perhaps a little more surprising is that one of the neutrals, Mr. LIPPINCOTT, who is manager of the Penn Mutual Life Insurance Company of Philadelphia, also issues a dissenting report. His dissent is, however, of a conservative order, and temperately expressed. It amounts rather to a verdict of not proven as regards the benefits of vaccination than to one of "guilty" of the charges alleged against it. It is, moreover, more than fully offset by the remarkable note appended to the report by the other two neutrals, one of them by professional training presumably specially fitted to appraise the value of evidence, which states that "they entered upon the performance of their duties with open minds, wholly free from any preconceived ideas or opinions upon the subjects of the reference, and they are convinced that the efficacy of vaccination and its relative harmlessness are so clearly established by the evidence that, in their judgment, not only is no other conclusion possible than as set forth in the report, but it would be difficult to more strongly and conclusively prove any fact of medicine or other science."

An important point is made in the fact that for the 20 years from 1889 to 1908 "England and Wales had actually seven and a half times the small-pox mortality of Germany, and proportionate to the population over thirteen times," in spite of the facts that England is distinctly in advance of Germany in the matter of general sanitation, as evidenced by the fact that her general

death-rate always has been, and still is, considerably lower; that the special sanitary measures for the suppression of small-pox—viz., notification, isolation, quarantine of contacts, and disinfection—are more rigorously carried out in England than in Germany, and that England, by her insular isolation, enjoys a great advantage over Germany, which is bordered by several countries in which small-pox is almost always present. The Commission says: "From a consideration of all the available data the only reasonable solution of the question is that Germany has more rigid and better administered vaccination requirements."

It is satisfactory to know that English and American scientific belief is practically similar with regard to vaccination, and a confirmatory instance of the comparative prophylactic value of vaccination and sanitary measures comes to hand in a special small-pox report from Poplar. It may be remembered that in the small-pox epidemic there in 1901–02 an attempt was made to carry out as thoroughly as possible preventive measures in a practical manner as recommended by the Royal Commission in answer to the following question concerning which it was called on to report—viz., What means, other than vaccination, can be used for diminishing the prevalence of small-pox; and how far such means can be relied on in place of vaccination? From experience of that epidemic it was found that although the maintenance of contacts was thoroughly carried out on the part of the department there was great difficulty in effecting their complete isolation, for they were not only visited by friends, but went out at night and often to places of amusement. That epidemic lasted from Dec. 4th, 1901, to Sept. 12th, 1902, and cost upwards of £1500. There were 410 infected premises, and entire maintenance was carried out in 224 houses. Isolation without vaccination implies shutting up the occupiers of houses for 14 days, and this quarantine has to begin again with every fresh case that develops among them, so that during this epidemic in some cases the occupiers of certain houses had to be isolated and maintained for over two months. The report of this epidemic should be read as a preface to the special report appearing now. On May 1st, 1913, the medical officer of health of Poplar found a woman, aged 34, unvaccinated, suffering from small-pox in Naval-row. The rash had appeared on April 29th. The woman was at once removed to the small-pox hospital. The tenant landlady and her three children were revaccinated and the children were excluded from school. Visitors in the house at the time were revaccinated, and the eldest daughter was kept from her work in the City, watch being kept by the medical officers of health of West Ham, Shoreditch (whence the original case was imported), and the City of London over the visiting contacts and their environment. The clothes of the inmates of the affected house were disinfected, as also was the house itself, but the children of the family played in the recreation-ground and the other members of the family were in no way isolated. But no further cases occurred. The medical officer of health for Poplar expresses the opinion that "a person who has been in contact with a small-pox case and is immediately vaccinated or revaccinated, and has had his or her clothing disinfected, is absolutely of no danger to the public."

The General Medical Council and the Administration of the National Insurance Act.

SIR DONALD MACALISTER, at the instance of the Executive Committee and of the National Insurance Act Committee of the General Medical Council, has been in communication with Sir ROBERT MORANT, the Chairman of the National Health Insurance Commission, upon certain important professional points which have arisen in the working of the Act. In the first place, the President of the General Medical Council has brought to the attention of the Commissioners the resolutions which have from time to time been adopted by the Council in respect of certain forms of professional misconduct. This has been done with the intent that the Commissioners may call the special attention of Insurance Committees, Local Medical Committees, and Approved Societies and Institutions to the matter. As far back as June 6th, 1899, the Council published a notice warning the profession "that the Council strongly disapproves of medical practitioners associating themselves with Medical Aid Associations which systematically practise canvassing and advertising for the purpose of procuring patients." Again, on Dec. 1st, 1905, a notice was published by the Council warning all registered medical practitioners against the issue on their own initiative of objectionable advertisements, and against the employment of agents or canvassers to the detriment of other practitioners. Both these warnings are still operative, and it is right that the National Insurance Commission should take official cognisance of them, and should see that those in charge of the administration of the Act do nothing to betray the medical practitioners with whom they are in coöperation into professional error.

The second point of importance which has been the subject of communication between the National Insurance Commission and the General Medical Council is the possibility of the violation of professional confidence being required from medical men assisting in the administration of the Act. Sir DONALD MACALISTER has brought to the knowledge of the National Insurance Commissioners that a number of communications have been received by the General Medical Council from different parts of the country alleging that certain societies and other bodies concerned in the administration of the Act are demanding that medical practitioners shall furnish certificates disclosing the precise nature of the illness of their insured patients, such declaration involving a breach of professional confidence as between patient and practitioner. The chairman of the National Health Insurance Commission has stated in reply that he does not consider that the breach of professional confidence really exists, as the medical certificate is given to the patient and not to the Societies or Institutions, adding, however, that the Commissioners have reason to believe that the Societies will assent to the adoption of a uniform wording for certificates, which, by bringing out the point that the certificate is a confidential document given by the practitioner to a patient, will tend to avoid the kind of misapprehension which has occurred. The General Medical Council has done good service in bringing these matters

to the attention of the National Health Commission. It is inevitable, especially in this early stage, that the professional position of medical men should be misunderstood by many of the laymen in whose hands the administration of the Act lies. We are particularly glad to note that the confidential nature of medical certificates is to be further insisted upon, for although it may be the literal truth that the certificate is given by the practitioner to a patient, it is the practical truth that such a certificate is not much good unless its contents are disclosed to others. The delicate nature of the trust imposed in this way on those others cannot be too clearly realised.

Annotations.

"Ne quid nimis."

THE PRESERVATION OF THE CRYSTAL PALACE.

No organism can maintain its health unless the vital functions of alimentation, excretion, and respiration be adequately performed. A complete failure of any one of them must result in death; any serious interference with it must lead to invalidism. A city is an organism. Stop all circulation in its streets, prevent the bringing in of supplies, the removal of excreta, or block up its breathing apparatus, and ill-health must ensue. Open spaces have well been called the lungs of cities. In the past our towns have grown up in haphazard fashion, and inadequate or no provision has been made for breathing organs. Growth has necessarily taken place centrifugally, so that the parts towards the centre are becoming daily farther and farther removed from the open country outside. Supinely to acquiesce in further consolidation of such parts of the lungs of a city as still remain capable of exercising their vital functions is a criminal blunder, while citizens may find it easier and less costly to avoid such an error than to remedy it. We join in the plea for the preservation of the Crystal Palace, which, once at the periphery of London, is rapidly becoming hemmed in by the advancing caseation of brick and mortar. It is thus the more imperative to maintain unimpaired its functional activity as a centre of the city's respiration. As London continues to increase, more open spaces will have to be created at an enormous cost. Knowing that, can we foolishly allow those that already exist to be destroyed? Of the £230,000 required to preserve this great breathing-place for London citizens only £140,000 had until recently been collected. An appeal is now being made by the *Times* for the remaining £90,000. Of this sum a "private citizen" has offered to find half a sovereign for every sovereign subscribed, or £30,000 in all, provided the remaining £60,000 is forthcoming before July 31st—480,000 half-crowns from a population of 7½ millions. It is unthinkable that this appeal should be made in vain, and already a good response has been made.

THE MONEYLENDERS BILL.

Is the medical profession a specially favoured objective for the moneylender's circular? We cannot say that it certainly is, because we must judge by our own post-boxes rather than by those of our neighbours in other callings; but our impression is that the medical practitioner is particularly pestered. Any legislation which aims at the lessening of this nuisance will therefore have the hearty support of our readers. The fact that too many of our number have to keep up appearances upon inadequate means, and the current belief that medical men are unbusinesslike, may account for the persistence with which they are urged to avail themselves of "temporary accommodation on note of hand alone," while the accuracy of the professional directories no doubt helps the moneylender to find his prey and to keep it within his grasp. If Lord Newton's Bill to amend the Moneylenders Acts, which was read for a second time in the House of Lords on Monday last, becomes law, the flood of touting circulars, which has grown so much of late years, will be dried up. This would save weak men in difficulties from one source of temptation, and would lighten the post-bag of those who are already overburdened with unsolicited correspondence. The other two provisions of the Bill are similarly intended to protect the weak and inexperienced from falling ignorantly into the hands of the usurer. One of them would compel the moneylender to give his trade its true name, and the other would compel him to carry on his business under his own name in addition to the one he has assumed. The result would be to bring further into daylight a class which loves obscurity in some directions, while seeking blatant publicity in others, and to remedy what was described by the introducer of the Bill in a merry speech as "one of the greatest curses of modern life." We hope that the House of Commons will find time to pass a measure which has already been assured by the Lord Chancellor of the benevolent attention of the Government.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ON the recommendation of the conservator, Professor A. Keith, it has been decided that the annual exhibition of specimens added to the Museum of the College during the past twelvemonth be continued for three weeks instead of being restricted to the latter days of the week on which the elections of members of Council are held. This arrangement is very advantageous and convenient, as since voting by papers has been granted there is no longer the crowd of Fellows and their friends who used to fill the Museum and the Library on the first Thursday in July. Now that the show of additions will be on view for three weeks and will be held in the Museum and Hall of the College instead of in the Council Chamber, there will be ample time for visitors and students to become acquainted with numerous novelties of interest which otherwise might have been completely overlooked. Mr. Shattock and Mr. Beadles, aided by members of the staff of many hospitals, have arranged not only a large number of additions, but a greater number of specimens already in the collection now classified according to the most advanced ideas. Of the special series, only that illustrating diseases of the female organs has been permanently classified and furnished with a catalogue kept on the shelves of the Museum for public use. But during the past 12 months Mr. Shattock and Mr. Beadles have steadily proceeded with the work of developing the series of general pathology now so conveniently arranged on the ground floor of the Museum. The new and important series of infective processes and diseases, which have been incorporated in general pathology, has occupied much time in its preparation and arrangement, and contains a large number of specimens illustrating diseases caused by micro-organisms and various parasites. It replaces the small group which till recently was placed at the end of the pathological collection. Many pathological preparations associated with cases lately made public have been stored up on the shelves of the Museum since last July. Among them is the skeleton showing progeria contributed by Mr. Hastings Gilford.

Sir B. G. A. Moynihan has sent a specimen of an œsophagus united to the small intestine, the patient surviving the excision of the stomach for nearly four years. A hydrocephalic ancient Egyptian skull is described by Dr. Douglas E. Derry and presented by Professor Flinders Petrie. Mr. A. W. Mayo Robson has presented a collection of gall-stones removed in the first series of operations which he carried out for their extraction. Dr. J. O. Wakelin Barratt has prepared and given to the Museum some models illustrating the process of normal and abnormal division of the nucleus of the cell, which have a direct bearing on the problems relating to cancer. Mr. Albert Carless contributes an instructive preparation representing the pathology of ectopia vesicæ, and other specimens. Under the direction of Mr. Arthur Cheatle, Mr. J. F. Colyer, and Mr. M. S. Mayou, the aural, dental, and ophthalmic collections have been put into excellent order. The surgical instrument series is undergoing rearrangement; at present the only part of the new catalogue which is completed is the descriptive list of obstetric forceps. The loan collection of the Royal Society of Medicine, now arranged in the Museum, includes Baudelocque's own cephalotribe preserved in the original case made for it by Sir Charles Locock. Sir Francis Champneys has presented some interesting old-fashioned instruments, including a trocar made for tapping and simultaneously extracting abdominal cysts, made by Messrs. Mayer and Meltzer, in the early days of ovariotomy for some forgotten designer. Mr. B. H. Walton, through Sir John Tweedy, has given a bag with a set of instruments formerly belonging to Sir William Fergusson. The medico-legal collection has been augmented by a set of cervical vertebræ showing fractures caused by official hangings. The teratological collection is enriched by some curious preparations demonstrating the effects of in and in breeding and the physiology of pseudo-hermaphroditism. Under the superintendence of Professor Keith and the physiological curator, Mr. Burne, the anatomical and physiological series have been enlarged by several unusually fine sets of preparations. Many of the dissections have been made by Mr. William Pearson, who has completed 57 years of service at the Museum, and others by the assistant prosector, Mr. H. C. Wilson, and Mr. Finerty. The conservator's annual report points out what a large number of papers dealing directly with work done or specimens preserved in the Museum have been published since the issue of the last report in 1912.

CHEMICAL ELEMENTS AND THEIR PARENTAGE.

WHILE there has been no sensational event or discovery reported in the chemical world recently, there is one branch of research being patiently pursued which promises to give us something more than a mere "glimpse into the nature of things," judging from the confirmatory evidence which is being obtained in favour of the probability of one element being changed into another by electrical influences. Early in the year some excitement was caused in scientific circles by the announcement that proof had been obtained of the conversion of energy into matter, because in old electric bulbs, which had contained hydrogen, elements were found which had previously not existed in the bulb. Speculation turned upon whether the new gases were the direct products of electric energy or whether they were merely occluded materials expelled from the bulb or whether they were transmutations of hydrogen or aluminium, the material of the electrodes. According to further work upon the subject Professor J. Norman Collie, with Mr. Hubert S. Patterson, find that electrodes are not necessary for the production of neon and helium, for, if a powerful oscillating discharge be passed through a coil of wire wound round a glass bulb containing a little hydrogen, helium with some neon can be detected in the residual hydrogen. Additional refinements were given to the experimental side of the subject with the same result, that is, helium and neon appeared in a thin atmosphere which formerly contained only hydrogen, judging by all the excessive precautions which were taken to exclude the presence of other elements. Hydrogen in considerable quantities can be made to disappear apparently entirely in tubes through which a heavy discharge passes. A gas was also produced in these experiments which showed a carbon spectrum, and there was a suggestion, too, that when copper, platinum, palladium, or magnesium was placed in the electric stream in a vacuum tube containing hydrogen sulphur was produced. In construing these results, it may be observed that preference is being given to the view that there is transmutation of material going on, while there appears to be little belief in the suggestion of there being a creation of matter out of energy. The birth of the atom is evidently not yet a plainly demonstrable fact. All the same, the researches, so far as they have been prosecuted, are yielding sensational results, suggesting the proof of transmutation to be coming. And it is fortunate that the way is now made clear for an exhaustive research on the transmutation of elements by the fact that experiment is open to all who can command the means of utilising powerful cathode discharges. It may be urged that the transmuted products so far apparently obtained are severely microscopic, but that does not detract from the possibility of establishing a principle which may underlie the development of all. Then may come the discovery that the primordial stuff after all is energy; at present such statements are premature.

VOLUNTARY MEDICAL AID IN PEACE AND WAR.

THE need of voluntary aid for the sick and wounded in war, over and beyond that provided in time of peace by the army establishment, was demonstrated in ghastly fashion in the Franco-German war, and most countries have organised such voluntary aid, for without proper organisation developed at leisure only a small part of the possible efficiency would be available. It is useless to shut our eyes to the fact that if not compulsory service of some kind, at any rate a greatly augmented citizen army for home defence will be developed, and measures should be taken now to provide the ancillary aid services for it to an adequate extent. To this end the Red Cross Society and the voluntary aid detachments have adopted the county basis, which is that of our Territorial Force; and this basis also affords the best opportunity for local support. Lady Mackinnon, acting President and Chairman of the City of London Branch of the British Red Cross Society, pointed out in an admirable address at the Imperial Services Exhibition on June 27th how important it is that the necessary financial support should be forthcoming by voluntary contributions, and not through Government grant, for this would inevitably entail increased red tape in the administration, and thus impair flexibility, which is so important an element in efficiency. She pointed out that to support a branch such as that belonging to the City of London only £400 a year—8000 shillings, or 16,000 sixpences—were required for actual working expenses. The utility of the training given by the Red Cross Society is not, of course, confined to war. It becomes increasingly evident in times of peace also. But mere training on "dummies," essential though it is as a basis, is generally insufficient in case of actual casualty. The emotions have to be considered as things that tend to upset the balance of even the most perfect theoretical training, and these emotions are not stirred by bandaging dummy wounded for imaginary accidents. To obtain control of the emotions and

other disturbing influences it is well that there should be some training in giving aid, under supervision, in actual emergencies, before any serious responsibility is undertaken. Lady Mackinnon urges that for as many of the 35,000 Red Cross nurses as possible a period of probationary training in the out-patient and casualty departments of the hospitals should be obtainable for a small fee. She would have the working girl and working man join the ranks. As to the proportion, she thinks that two-thirds women, to do the nursing and detail work, and one-third men, for the actual physical labour, would be suitable. Lady Mackinnon laid great stress also on proper training as to what not to do, and illustrated her remarks with incidents from her own experience, which has been considerable. We are informed that this lecture was only one out of a series of practical addresses that will be given from time to time at the exhibition. The importance of the work of the Red Cross Society and the voluntary aid detachments (both men's and women's) can hardly be overestimated, and they are entitled to the support, both financial and so far as possible by personal service, that can be given to them by the public.

TUBERCULOSIS OF THE LIVER WITH JAUNDICE.

IT is well known that tubercles are often found in the liver in fatal cases of generalised tuberculosis. Caseous tuberculosis of the liver also occurs, but is rare. These conditions have been observed post mortem. The clinical aspect of tuberculosis of the liver has received little attention. In the *New York Medical Journal* of May 10th Dr. L. S. Milne has reported two cases of tuberculosis of the liver with jaundice. The clinical picture is fairly definite, but has scarcely been noticed in the literature of tuberculosis. In the first case the patient was a somewhat wasted but well-developed man, aged 58 years, suffering from alcoholic neuritis. The liver was slightly enlarged and could be faintly palpated 1½ inches below the costal margin in the mid-clavicular line. Four weeks before death the temperature began to rise to 101° F. and sometimes to 102°. He became rapidly weaker; his gums became spongy, and several attacks of epistaxis occurred. The bowels became very loose, and there was slight melæna. The abdomen slowly became distended with gas and was slightly rigid and tender. Typhoid fever was suggested, but the Widal reaction proved negative. Von Pirquet's tuberculin reaction was positive. Blood examination showed 14,000 leucocytes, 75 per cent. of which were polymorphonuclear. Eight days before death the liver was considerably larger, reaching 2½ inches below the costal margin. The spleen appeared to be slightly enlarged. At this time jaundice was noticed, and rapidly progressed in intensity. The leucocytes fell to 4600. The temperature ranged from 99° to 101°. At the necropsy the liver was found enormously enlarged, weighing 2950 grammes. It was almost completely filled with miliary tubercles. The spleen was also enlarged and crowded with tubercles. There were many tubercles in the cortex of the kidneys. No signs of tuberculosis could be found in the other organs, but there were a few adhesions at the apices of both lungs. In the second case a man, aged 42 years, complained of pain in the right hypochondrium and sometimes in the back. He showed considerable jaundice, the duration of which could not be ascertained. There was slight emaciation. The upper abdomen was tender and the liver was much enlarged, extending from the fourth rib to three inches below the costal margin. The spleen was slightly enlarged. The temperature rose to 101° in the afternoon. Obstructive jaundice was diagnosed and laparotomy was performed. The liver was large and congested. The gall-bladder was buried in adhesions. No calculi could be found, and the abdomen was closed. The jaundice diminished, but increased again four months after the operation. Pulmonary tuberculosis developed, and death occurred seven months after the operation. The liver and spleen were found crowded with caseous tuberculous areas. It is noteworthy that hepatic tuberculosis was not diagnosed in either of these cases. In the recorded cases its diagnosis has generally been missed, though the clinical picture is fairly definite.

"CORKAGE."

Is there a more absurd institution than corkage? The announcement to the hotel visitor that if he chooses to bring his own wine to drink he must pay a uniform tax of 2*s*. per bottle to the proprietorship for the privilege discloses that an inordinate profit, in many cases at any rate, is demanded upon the hotel supply. "Corkage" amounts to saying that the use of wines other than those supplied by the hotel is prohibited. It would be much better to be candid and say so, for no one imagines any visitor idiotic enough to pay a tax of 2*s*. or so on every bottle of wine he consumes, whatever its price. Neither will he be very willing to patronise the wines of the hotel when he realises that the corkage charges probably indicate the scale of profit expected. The service of wines at an hotel is not, as a rule, good, while, if it is, the charges betray no modesty. Speaking of the lighter wines, such as claret, moselles, and hock, it is seldom that a bottle of these is sold much under 100 per cent. profit. The result is that wine is rarely found on the tables of the hotel at all. A glance down the dining-room of most hotels shows invariably at the tables a stock of whisky and the syphon of soda. In many instances this form of stimulant may be chosen for good dietetic reasons, but in the great number of cases the motive is more often than not an economical one. But if the hotel proprietor sells no wine because of exorbitant charges there is no logic in charging corkage. The tax of corkage and the heavy charges for wines amount to the same thing; in the former case an unreasonable tax is forbidding, while in the latter case the charges are manifestly monstrous. It is a physiological pity, we think, that such a system induces so many people to abandon the moderate consumption of a good, light, wholesome wine in favour of a mixture of spirits and water. Surely a practical compromise is possible. Either let wines be sold at a more reasonable rate, or let corkage be based upon a sliding table tax of a few pence which few would grudge paying for the privilege of drinking a wine of the suitability and wholesomeness of which they have private knowledge.

THE DISTANCE WHICH CAN BE TRAVELLED AFTER FATAL CUTTING OF THE THROAT.

THE question how far a man can travel with his throat so severely cut as to cause death directly is of medico-legal importance. In the *Australasian Medical Gazette* of May 10th Dr. A. Goldsmid has reported a case in which the distance travelled was remarkable. A man aged between 35 and 40 years was found dead in a paddock a few yards from the road. His throat was cut, but only one or two spots of blood could be found near the body. On the top of a hill 300 yards away there was a spot soaked with blood, near which was a blood-stained razor. Examination of the body revealed a horizontal wound 1¼ inches long through the thyrohyoid membrane with the points of the serrations to the left. No important vessel had been cut. The hands were blood-stained, the right most so. The body was not pale, and the mucous membranes were not blanched. As only an inspection of the body was ordered the cause of death could not be stated with certainty, but the conclusion was that it was due to blood trickling down into the lungs.

Evidently suicide had been committed by a right-handed man, who wandered along the road in search of help when he found the wound was not immediately fatal. After the external bleeding ceased he travelled 300 yards. Not a drop of blood could be found on the road he must have travelled.

KALA-AZAR IN ASSAM.

IN a supplement to the last annual report of the Sanitary Commissioner of the now divided province of Eastern Bengal and Assam there is published a short but interesting paper by Captain W. L. Harnett, I.M.S., civil surgeon, Kamrup, on the prevalence of kala-azar during recent years in the Rangiya circle situated in his district. The inquiry and report were made in continuation of a similar investigation respecting the disease in the Golaghat subdivision, but the present inquiry was conducted apparently on less ambitious lines, being practically limited to ascertaining which of the villages in the circle were infected, the extent of the infection, and probable date of the first appearance of the malady in each village. Captain Harnett supervised the work and prepared the report, but the actual investigation on the spot was made by temporary Sub-assistant Surgeon Purushuttam Das Navis, who began his duties early in 1912. The implicated area lies north of Rangiya in the Kamrup district and in the neighbourhood of the main road to Bhutan. The inhabitants of the locality commonly take up temporary employment during the cold months of each year as tea-garden coolies in the gardens of the Darrang district or in more distant parts of the province, returning to their villages in the hot weather to cultivate their own land. These people attribute the existence of kala-azar in their midst to infection contracted while working in the tea gardens and brought back by returning villagers to the Rangiya circle. During the course of the inquiry 67 villages were visited and 14 of them were found to be infected. The population of the affected area is not stated, and house-to-house visits for the discovery of cases do not appear to have been made. It was assumed at the beginning of the investigation that the clinical recognition of the disease presented little difficulty, and for this reason it was not thought necessary to make microscopical examinations; but Captain Harnett in his visits for supervision of the work satisfied himself that the cases diagnosed by the sub-assistant surgeon were actually instances of kala-azar infection. It was elicited that during the past 11 years 82 deaths had been attributed to the malady in the 14 infected villages, and that at the present time 26 persons were suffering from the disease. This area may therefore be regarded as a focus of kala-azar infection. The information obtained is valuable and interesting, but in some respects it is disappointing as it throws little light upon etiological or epidemiological points. Captain Harnett himself, in his concluding remarks, frankly admits that the report is lacking in various respects, and he expresses regret that the sub-assistant surgeon who made the local inquiries failed entirely to realise the important bearing which some of the missing details would have had upon the points that he was instructed to try to elicit. In THE LANCET of Sept. 28th last year we drew attention to some of the important epidemiological considerations associated with Indian kala-azar and to the persistence of the malady in the province of Assam, especially in the tea-growing districts. In three of these—namely, Nowgong, Darrang, and Kamrup—from 1891 to 1911 the deaths of no fewer than 152,000 persons were ascribed to this terrible, and as yet incurable, disease. The comings and goings of the tea-garden coolies afford, apparently, opportunities for the diffusion of the disease not only throughout Assam, but to other parts of India. While local inquiries furnish useful and interesting information, they do not go far enough to throw light on the still unsolved problems for which solution is urgently needed. This end will best be secured by comprehensive investigations on a large scale and covering a wide area, conducted by the trained etiologists and expert epidemiologists who are to be found in the ranks of the Indian Medical Service.

THE BRITISH JOURNAL OF SURGERY.

UP to the present no attempt has been made to issue in this country a journal exclusively devoted to surgery, though in several other countries surgical journals of one kind or another have existed for some years. At last Messrs. John Wright, of Bristol, have decided to bring out the *British Journal of Surgery*. A very strong editorial committee has been formed, including some of the best-known names in surgery in the British Isles, and Mr. E. W. Hey Groves is to act as editorial secretary. We welcome the appearance of the first number; it consists of 152 pages, it is quarto form, and it is well printed on good paper. So much for the appearance of the journal. As to its contents an equally favourable verdict may be given; it contains a number of valuable papers, every one of which is of great interest, and where needed illustrations have freely been provided. A short introduction from the President of the Royal College of Surgeons of England, Sir Rickman Godlee. sets forth the aim of those who are responsible for the new venture, and this is followed by a very good photogravure of Lord Lister, with a brief appreciation of his work for British surgery. Dr. David Newman has written a paper on Renal Varix and Hyperæmia as Causes of Symptomless Renal Hæmaturia, illustrated with several coloured drawings. Mr. D'Arcy Power has a paper in which he urges the need for earlier operations in cases of gall-stones; the paper is based on 90 cases, and we must subscribe to the conclusions at which he arrives. Mr. Albert Carless describes a case of a boy who had two dermoid cysts in the mid-line of the perineum. The two cysts communicated, and from the hinder of the two swellings there ran backwards a narrow, hollow channel as far as the anal margin. The two photographs show the condition very clearly. Mr. W. Sampson Handley draws attention to an operation devised by the late Sir H. T. Butlin for reducing the size of the tongue when it is too large for the mouth or when its lateral margin shows dangerous or annoying irritability from the teeth. The operation consists in removing a wedge-shaped piece from the margin of the tongue, and a case is described in which the result was very satisfactory. Mr. G. E. Gask has contributed an account of a case in which he grafted a piece of the fibula into the space formed by the removal of a chondro-sarcoma from the humerus of a boy. Mr. H. Morriston Davies has examined over 400 specimens of the first costal cartilage in relation to whether the condition has any connexion with tuberculosis, and he comes to the conclusion that neither abnormal shortness nor ossification in the first costal cartilage predisposes to apical pulmonary tuberculosis, and from this and from other considerations he finds the evidence against the probability of the operation for the division of the first costal cartilage in cases of apical tuberculosis producing any material improvement. Mr. Robert Jones and Mr. S. Alwyn Smith (Winnipeg) have written an interesting paper on Rupture of the Crucial Ligaments of the Knee and on Fractures of the Spine of the Tibia. Mr. Robert E. Kelly has quite a timely article on Intra-tracheal Anæsthesia, and Dr. Francis E. Shipway discusses clearly the advantages and disadvantages of recent methods of anæsthesia. These papers should be of great value to many

surgeons, who should be in a position to understand the methods of anæsthesia employed for their patients. Mr. A. Rendle Short contributes a review of the current theories of surgical shock, and considers the most probable cause of shock to be oligæmia. An account is given of visits to two surgical clinics—to that of Sir William Macewen at Glasgow, and to that of Professor Tuffier in Paris. A valuable and instructive section is that devoted to anonymous reports of mistakes in diagnosis and treatment; it is probable that surgeons will be more ready to record mistakes if they are allowed to do so without the disclosure of their names. A few short notes are given of rare or obscure cases, and a section is devoted to new instruments and appliances, containing in this number an account of a suggested portable operating theatre written by Mr. G. H. Colt. Some reviews conclude the number. It is noticeable that no degrees or other distinctions are appended to the names of the authors of the several papers, though the city of the author is stated. We have said enough to show the value and variety of the contents of this the first number. The journal is a thoroughly good one.

INFANTS' FEEDING BOTTLES IN GERMANY.

THE draft of the Bill regulating the sale of infants' feeding bottles in Germany is extremely brief and consists of three short paragraphs. In the first it is enacted that the manufacture, sale, importation, or stocking of infants' feeding bottles with a glass or indiarubber tube is forbidden, and the same applies to the component parts of such bottles. Infringement of this law will be punished by a fine not exceeding £7 10*s*., or punishment; at the same time the articles may be impounded whether they belong to the culprit or not. If a conviction of certain persons is impossible, seizure of the articles can take place. This law is to be enforced three months after its publication. In the introduction to the Bill it is stated that one-third of all cases of death among infants are due to affections of the digestive tract, and that medical men have declared that feeding bottles with tubes, owing to the difficulty of properly cleaning them, are particularly apt to cause gastro-intestinal disease.

AN ANTINEURITIC SUBSTANCE FROM HORSEFLESH.

IN the May number of the *Bio-Chemical Journal* Mr. E. A. Cooper contributes an interesting paper dealing with the preparation from animal tissues of a substance which cures polyneuritis in birds induced by diets of polished rice. He has prepared from horseflesh a fraction rich in antineuritic substance by precipitating an alcoholic extract of the flesh by means of ether. The ether dissolved the fats and lipoids, leaving undissolved a considerable amount of a white substance. Tested on neuritic pigeons this substance, after continuous washing with ether, brought about complete recovery within 12 hours, using doses of 0·3 gramme (4½ grains). The ether soluble fraction possessed only slight remedial properties. The alcohol soluble fraction was strongly curative in action. On treating this with excess of ether a yellow syrup separated which was completely soluble in water, and doses of 0·2 gramme were sufficient to cure pigeons affected with polyneuritis. From these experiments it is suggested parenthetically that the curative properties of lecithin are due to an antineuritic substance which is not alipoid, but which is present in ordinary lecithin as an impurity readily extractable therefrom by simple methods. The curative substance extracted from horseflesh is insoluble in absolute alcohol, benzine, chloroform, ether, and ethyl acetate, but is moderately soluble in water. The substance is absorbed to some extent by animal charcoal, and is readily destroyed by alkali. It is not inactivated by sulphuretted hydrogen, but disappears in large amounts during chemical operations in which colloidal metallic sulphides are formed. Incidentally it is shown that quinine and cinchonine exert a temporary curative action upon birds affected with polyneuritis. After being treated at 125° C. for six hours, however, quinine has no ameliorative effect, so that its curative properties under these circumstances would appear to be due to its contamination with traces of the antineuritic substance derived from cinchona bark. Apparently alcoholic neuritis does not result from a diminished capacity of the organism to utilise the antineuritic substance, for the administration of small doses of alcohol to birds fed on polished rice does not affect the period of time elapsing before the occurrence of polyneuritis, and so appears not to influence the utilisation of the supply of antineuritic substance distributed in the tissues of birds. These researches are welcome, as it is obvious that the antineuritic substances possess a remarkable physiological significance.

Sir Alfred Pearce Gould has given £1000 to the Middlesex Hospital, with a request that the money should be spent on the purchase of radium to be used for the treatment of patients, especially those suffering from malignant disease. Sir Alfred Pearce Gould by this great generosity has laid the Middlesex Hospital under a further debt to him.

WE regret to announce the death on June 30th, in his seventy-seventh year, of Mr. Alfred Willett, consulting surgeon to St. Bartholomew's Hospital, and formerly vice-president of the Royal College of Surgeons of England. We shall publish an obituary notice in our next issue.

THE Postmaster-General has appointed Dr. J. Sinclair to be Chief Medical Officer to the Post Office in place of Mr. A. H. Wilson, who is retiring under the age limit.

HISTORICAL MEDICAL MUSEUM.

MEDICINE has a history, a history which has touched every phase of life and art. The desire, which within recent years has been growing stronger and stronger for anything that is ancient and curious, has shown itself in medicine; lectureships on the history of medicine have been instituted, and in connexion with the forthcoming International Medical Congress a separate section has been allotted to the subject. A museum is always an integral part in the present day of the teaching of any subject, but in the matter of history, and particularly that of medicine, it is absolutely necessary for historical accuracy to have the concrete evidence which a museum alone can give.

The Historical Medical Museum, which was opened last week by Dr. Norman Moore, President of the Section on the History of Medicine of the Congress, has been organised by Mr. Henry S. Wellcome; it represents the work of some years, which only an enthusiast could have accomplished. The present year, in which the Seventeenth International Congress of Medicine meets in London, has afforded Mr. Wellcome a favourable opportunity of allowing others interested in the subject to study this remarkable collection of rare and curious objects of historical interest connected with medicine and the allied sciences. In this work Mr. Wellcome has had the valuable aid of members of the profession who are likewise deeply interested in the subject, and many in various parts of the world have presented or loaned objects, with the result that a most illustrative collection has been brought together. It is gratifying to learn that the museum has been officially connected with the Congress, and it will thus form the museum of the Section of the History of Medicine; in fact, one might say it will form the important part of that section.

Every effort has been made to arrange the museum on a rational basis, but a glance at the collection will at once

convince anybody that the ground covered is so comprehensive as to make the task a difficult one. However, an excellent handbook has been prepared. Plans of the museum will be found on pages 10 and 11 of this handbook, indicating the arrangement of the exhibits on the first and ground floors or basement of 51A, Wigmore-street, where the museum is situated. Further plans are inserted facing the first page of each section, and showing the general arrangement of that section and also the itinerary in accordance with the sequence of the exhibits described in the handbook. This handbook is intended to serve only as a descriptive guide and to indicate the chief features and objects exhibited in the museum.

We propose to refer to some of the more interesting and striking exhibits. On entering the museum we come first to the Hall of Primitive Medicine, which gives an insight into the native medical methods of Africa, Tibet, the islands of the Pacific, and other lands inhabited by primitive peoples, and illustrates graphically the beginnings of medicine. There also are various exhibits relating to the development of tropical medicine, with an annexe of parasitology, in which are demonstrated under the microscope specimens of the most important protozoal agents of disease. Passing through a corridor containing pictures of medical interest we come to the Hall of Statuary. Here are to be found sculptures, pictures, and other exhibits, illustrative of the healing art and of its development among Oriental, Egyptian, Græco-Roman, and other peoples. There is a Greek temple modelled after the Temple of Erechtheion in Athens, containing Roman votive offerings of anatomical, pathological, and obstetrical interest, excavated chiefly at the Temple of Æsculapius on the Tiberine Island and from the Temple of Maternity in Capua; statues of Apollo, Asklepios, Hygeia, Ixlilton (the Mexican Little Black Brother, the deity of healing), Shen-Nung (2838–2698 B.C., the founder of the healing art among the Chinese), Dhanwantari (India), Ea and Marduk (Chaldea), Gula and Adapa (Sumerian), Thoth, I-Em-Hetep, and Ptah. There are also collections of ancient surgical instruments, Greek, Roman, Chinese, Native African, mediæval, and others of later times. In the galleries are charms, talismans, and amulets, combs and hairpins, spectacles and eyeglasses. We then pass on the right into the gallery of pictures, which contains interesting portraits and relics of Edward Jenner, with many other portraits of important personages in the history of medicine, including many British celebrities, Caius, Sydenham, Harvey, Sir Thomas Browne, Mead, Sir Hans Sloane, John Hunter, and others. Amongst the pictures attention may be drawn to No. 70, described on p. 71 of the handbook. This interesting oil painting, painted in the sixteenth century, represents a patient being prepared to have his leg amputated. By the bedside sits the surgeon, warming the instruments preparatory to operating, while at the foot of the bed is a group of monks praying for the recovery of the patient. Entering at the door is the physician. From the Gallery of Pictures we pass into the Gallery of Ancient Manuscripts, where are found a collection of medical diplomas from the sixteenth to the eighteenth centuries, many illuminated, and other MSS. on medicine from the thirteenth to the eighteenth centuries, with ancient medical documents and MSS., and English, Greek, and Oriental early printed books on medicine.

Leaving the first floor, we go downstairs to the ground floor or basement, which has been skilfully utilised for reconstructing actual scenes in medical and surgical practice in ancient times. The series begins with a chapel of votive tablets from the seventeenth to the nineteenth centuries, chiefly from the church of Santa Maria dei Bagni, Deruta, Perugia. Some of these curious tablets are original and others replicas of offerings for recovery from accidents and disease. Annexed to this is a London pharmacy of the eighteenth century. The shop front is the original of the pharmacy established in 1798 by John Bell, founder of the Pharmaceutical Society. The vases in the interior are of Devonport ware, the ointment jars are of Staffordshire stoneware, and the essence bottles of red Venetian glass. The laboratory in the rear, in which a pharmacist is at work, contains the actual fittings of a pharmaceutical laboratory of the eighteenth century that once stood in Russell-street, Covent Garden, London. Next we pass to the shop of John Smith, Apothecarie, at "Ye Sign of ye Wilde Man," in ye Old Bailie, London, 1662. The shop has been carefully reconstructed, and shows John Smith in the dress of the period studying his pharmacopœia. Next to the shop of John Smith is the laboratory of an alchemist of the sixteenth century, and then we come to an Italian pharmacy of the same period. A barber's surgeon's shop of the Tudor period, with the barber surgeon engaged on some chirurgical treatment, at once carries the spectator back into the sixteenth century. The consulting-room of the Pompeian surgery gives an Alma Tadema touch to this part of the museum. The furniture and decorations are copied from originals found in Pompeii and Herculaneum and now in the museum, Naples. After passing some interesting exhibits relating to the plague we come to scenes reconstructed to show the actual practice in the mediæval hospital at a maternity case. In the same gallery are exhibited a collection of parturition chairs. One of these, of the eighteenth century, was believed to possess miraculous powers, and was known as "the miraculous chair of Palermo." It was in the possession of a famous family of midwives for three generations, and is estimated to have been used in 2000 cases of delivery.

Before leaving the basement one ought to cast one's eyes up to the ceiling of the front gallery, more particularly in view of the recent criticisms in the press on the complicated nature of the prescription of the present day, and there read the prescription for the making of theriaca. This contained no less than 75 ingredients. There is also a water-colour drawing representing the making of the famous theriaca in Bologna. The preparation of this medicament was carried out with much ceremony and solemnity in the presence of the leading officials of the city in the courtyard of the ancient Archiginnasio, the old University of Bologna. An attempt was made in the earlier part of the eighteenth century to remove it from the British Pharmacopœia, but the British public, notwithstanding the complicated nature of the prescription, declined to part with an old and well-tried remedy, with the result that the theriaca with some modification remained in our Pharmacopœia until the year 1788. The copies of the pharmacopœias bearing out these statements are also exhibited.

On the ground floor there is also exhibited a collection of instruments of torture and appliances for restraining the insane from the fifteenth to the eighteenth centuries, several of these having been lent by the London Metropolitan Asylums Board.

We close with congratulating heartily the Secretary, Mr. C. J. S. Thompson, who has studied and arranged the large amount of interesting material that has been gathered from all parts of the globe. Considerable artistic taste has been displayed in the setting of the collection. This feeling has been carried into the handbook itself, which in addition to the plans to which we have already referred, contains some well-executed illustrations. That of Hippocrates facing the title page is taken, we believe, from a bust in one of our national collections, and the decorative headings throughout the handbook are reduced facsimiles of the friezes especially designed and painted for the Historical Medical Museum.

THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE (1913).

SECTION OF TROPICAL MEDICINE AND HYGIENE.

THE Section of Tropical Medicine and Hygiene, of which the President is Surgeon-General Sir David Bruce, A.M.S., is holding discussions as follows:—August 7th: Plague; reporters, Professor Dr. S. Kitasato (Tokyo), Major W. Glen Liston, I.M.S., and Dr. Simond have promised to take part in the discussion. August 8th: Beri-beri; Professor Dr. C. Eijkmann (Utrecht), Professor Dr. B. Nocht (Hamburg), Professor Schaumann, and Mr. Funk will take part in the discussion. August 9th: Sanitary Organisation in the Tropics (jointly with the Section of Naval and Military Medicine); Lieutenant-Colonel P. Hehir, I.M.S., Stabsarzt Dr. Hintze (Berlin), Professor Sir Ronald Ross, Colonel King, I.M.S., Professor Plehn, Professor W. J. Simpson, and Dr. Edm. Sergent will take part. August 11th: Leishmaniasis; Professor A. Laveran (Paris), Dr. Nattan-Larrier (Paris), and Dr. C. Nicolle (Tunis). Sir William Leishman will take part in the discussion. August 12th: Relapsing Fevers; Dr. C. Levaditi (Paris) and Professor

F. G. Novy (U.S.A.); a part will be taken in the discussion by Dr. A. Balfour and Dr. Darling.

Papers have been received on the Prevention of Malaria in Troops in India and on Ulcerated and Spongy Gums in Indian Troops, both by Colonel Hehir. The following papers have been promised: Dr. Castellani, Yaws; Captain Craig (U.S.A.), Dengue; Dr. Robert Doerr (Vienna), Phlebotomus Fever; Professor Katsurada (Japan), Schistosomiasis; Dr. van Loghem (Utrecht): (1) on the Yellow Fever Danger for Asia after the Opening of the Panama Canal; and (2) the Difference between Vibrio Cholera and Vibrio el Tor; Dr. J. W. W. Stephens (Liverpool), Blackwater Fever; Professor Th. von Wasielewski, Zur Kenntnis der Halteridienkrankheit der Vögel, mit Demonstration.

The section will meet in the Physical Chemistry Theatre on the ground floor of the Imperial College of Science. An epidiascope will be available for demonstration at the sittings. The details for the sectional entertainments are not yet completed; they will include visits to the London Tropical School and probably to the Liverpool Tropical School. A dinner will be held.

The secretary is Dr. A. W. G. Bagshawe, Imperial Institute, London.

SECTION OF PSYCHIATRY.

The meetings of this section are to be held in the Chemical Library of the Imperial College of Science and Technology, South Kensington.

The following are the discussions arranged and the names of reporters:—Thursday, August 7th: The Psychiatric Clinique, its Aims (Educational and Therapeutic) and the Results Obtained in Respect to Promotion of Recovery; reporters, Dr. Adolf Meyer (Baltimore, U.S.A.) and Professor Dr. Sommer (Giessen). Friday, August 8th: Psycho-Analysis; reporters, Professor P. Janet (Paris) and Dr. Karl Jung (Küsnach-Zürich). Saturday, August 9th: The Psychoses of Infection and Auto-intoxication; reporter, Ghr. Professor Dr. K. Bonhöffer (Breslau). Monday, August 11th: The Syphilitic and the Parasyphilitic Insanities; reporters, Professor Dr. W. v. Bechterev (St. Petersburg) and Dr. A. Marie (Villejuif). Tuesday, August 12th: The Psychology of Crime (jointly with Section of Forensic Medicine); reporters, Professor Comm. E. Morselli (Genoa) and Professor W. Weygandt (Friedrichsberg, Hamburg).

The afternoon meeting on Saturday, August 9th, will be held at Claybury Asylum, when a pathological demonstration will be given by Dr. F. W. Mott; and Dr. Robert Jones will show the members of the Congress round Claybury Asylum.

Dr. E. Goodall, of the Mental Hospital, Cardiff, has undertaken the arrangements of the museum specimens for this section, and is working with Dr. H. W. Armit, who is responsible for the management of the general museum of the Congress. Arrangements have been made for showing the plans of several of the London county asylums. Facilities will be given for members to visit Bethlem Royal Hospital, the London County Council Asylums, Darenth colony for mentally afflicted persons, and Holloway Sanatorium, Virginia Water.

Entertainments.—A garden party has been arranged by the kindness of the governors of Bethlem Royal Hospital on Thursday, August 7th, the number of guests being limited to 500. Those desirous of attending should apply early for tickets. Those who wish will have an opportunity of visiting the wards of this ancient and Royal hospital for the insane.

The sectional dinner will take place on Thursday, August 7th, at the Imperial Restaurant, Regent-street. Those desirous of attending should apply for tickets as early as possible. The price of the dinner will be 7*s.* 6*d.*, exclusive of wine. Each member is expected to pay for his own dinner and that of any guest he may invite.

The Lord Mayor of Cardiff has most kindly issued an invitation to lunch to those members of the section desirous of visiting the Cardiff Mental Hospital. As this will mean a whole day excursion from London, the date has been fixed for Wednesday, August 13th, the day following the closing of the Congress. For those who have time, we should strongly advise the acceptance of this invitation. This mental hospital is thoroughly worth a visit, as it is one of the latest and most completely equipped mental hospitals in the country. Those who desire to go are requested to apply for tickets as soon as possible in order that the Lord Mayor may have time to arrange for the luncheon, &c.

The president of the section is Sir James Crichton Browne, and the acting secretaries, Dr. Maurice Craig, 54, Welbeck-street, W., and Dr. Percy Smith, 36, Queen Anne-street, W.

THE SEVENTH REPORT ON PLAGUE INVESTIGATIONS IN INDIA.[1]

THE Advisory Committee appointed jointly by the Secretary of State for India, the Royal Society, and the Lister Institute have recently issued their seventh report in the form of "Plague Supplement II." to the *Journal of Hygiene*. It is generally recognised that the work done under the direction of this Advisory Committee has contributed largely to establishing the modern etiology of bubonic plague upon a scientific basis. The present report contains 16 separate articles dealing mainly with experimental researches which throw considerable light upon many of the outstanding problems associated with the disease, its causes, prevention, and treatment. Below we give a brief summary of the papers comprised in the report.

Plague in Madras City.

The apparent immunity of this city from plague was investigated, and the conclusion arrived at was that the conditions of house construction in Madras were not unfavourable to the establishment of epidemic plague, and that suitable climatic conditions for the spread of the disease prevail during the winter months. Further inquiries are being carried out in certain districts of the Madras Presidency. In THE LANCET of March 22nd, p. 841, we discussed this question from various standpoints.

Statistics of the Occurrence of Plague in Man and Rats in Bombay, 1907 to 1911.

During the five years 24,784 persons died from plague in Bombay, and in the same period 563,784 rats were submitted for examination, 75,605 of them being found infected; of these infected animals, 60,614 were Mus decumanus and 14,991 Mus rattus. The fact that the first-mentioned variety of rat suffered more from plague than the other is said to be due to the greater infestation of the former by fleas, double the number of these parasites being found on M. decumanus as compared with M. rattus. The plague epidemic in Bombay begins in M. decumanus a little earlier than in M. rattus, and shortly afterwards the human epidemic begins.

The Distribution of the White-bellied Mus Rattus in Bombay.

The white-bellied M. rattus, commonly known as M. alexandrinus, is found on Bombay island, and its proportion to the total rats examined was found to be 8 per 1000; but this proportion varied from 1 per 1000 in the densely populated districts to 26 per 1000 in less crowded areas.

The Immunity of the Wild Rat of India.

Rats from different localities show varying degrees of immunity to plague; and this is relative to the infecting dose of the virus. Immunity is greatest in places which have suffered more severely from plague; it is less marked in those places which have suffered to a moderate extent, and least of all in those places where epidemic plague has not occurred. This immunity is not always acquired from an attack of plague, and it is transmitted by the parents to their offspring which have not been exposed to infection. Young rats are more susceptible than older animals, the dose being the same for all weights.

Chronic or Resolving Plague.

From a series of careful observations made on rats it was concluded that lesions, termed by the committee "resolving and resolved," are found in rats which have been subjected to plague infection, and in certain individuals these lesions are stages in the natural process of recovery from the acute form of the disease. These lesions are different from those found in the acute stages of plague; they are generally localised and confined mostly to the spleen. It is not

[1] The Seventh Report on Plague Investigations in India. Journal of Hygiene. Plague Supplement II. Cambridge University Press. Price 7*s.* net.

always possible to prove that these lesions are due to the plague bacillus by isolating that bacillus from them, for in many cases the bacilli have been killed, have disappeared, or have been replaced by some other organism. That the lesions are frequently produced by the plague bacillus has been shown by (*a*) demonstrating the presence of plague bacilli in some of the lesions which exactly resemble others either in the same rat or in other rats in which no plague bacilli could be found, and (*b*) by the fact that the lesions increase in numbers during and after epizootics of the disease. Nevertheless, it must be borne in mind that very similar lesions can be produced by other causes, as has been proved by the experience of the examination of rats in Madras city where the disease was not present.

The Experimental Production of Resolving Plague and Post-Plague Lesions in Rats.

Of 1079 rats which had survived inoculation with plague, and which were killed three weeks later, it was found that 11 per cent. showed resolving or resolved plague lesions. The largest proportion of these lesions were found in the survivors of the most susceptible rats. For example, all of the 1000 Madras rats died after inoculation save 18, and nine of these bore signs of having passed through an attack of plague. The converse holds true, for in five only of 160 Poona rats which survived inoculation out of 300 tested were plague lesions present.

Experimental Plague Epidemics among Rats.

The results of fresh experiments on this subject confirm those already published regarding the spread of plague from infected rodents to their healthy companions through the agency of fleas. Generally, the proportion of rats contracting plague varied with the number of fleas present. As regards the mortality in the different epizootics, it appears that the flea prevalence and the degree of septicæmia developing in the infected rats were the chief influences which operated.

Observations on Flea-breeding in Poona.

These observations indicated that the laying of eggs by wild fleas, the development of the eggs into larvæ, and the transformation of larvæ into pupæ and imagines all showed a marked seasonal variation, being most active when the weather was wet and the temperature moderate, and being least active under hot and dry conditions. Within the range of temperature obtaining in Poona atmospheric humidity seemed to be a more important factor than temperature in affecting the seasonal variation. Artificial humidification of the atmosphere is favourable to all stages of the metamorphosis, especially in the dry season. The seasonal variations in the results of artificial breeding correspond in time to the seasonal variations in the prevalence of fleas on rats in nature. The life of an adult flea is longer in a cool and moist atmosphere than under hot and dry conditions.

The Serum Treatment of Human Plague.

A series of observations were made at the Maratha Plague Hospital, Bombay, on the serum treatment of plague from 1908 to 1911. As a result, it seems probable that the administration of the two available sera (Yersin's and antitoxic serum from horses injected with the nucleoprotein of the plague bacillus) is not a practicable means of bringing about any material diminution in the mortality from plague in India.

Some Special Experimental Researches.

Some special experimental researches were carried out by Dr. Sydney Rowland, of the Lister Institute; they included an attempt to separate the antigen from the nucleoprotein of the plague bacillus by filtration through gelatin, but the attempt was not successful. Besredka's method of vaccination was also investigated to determine the toxicity of a "whole" vaccine prepared according to Besredka's method, and also to ascertain the amount of endotoxin that could be extracted from plague bacilli before and after soaking (sensitising) in antiserum. The relation of pseudo-tubercle to plague as evidenced by vaccination experiments was also investigated by Dr. Rowland. Observations, too, were made by him on the mechanism of plague immunity, including the fate of the plague bacillus after inoculation into rats, and the multiplication of bacilli in rat serum. Whatever the mechanism, the same toxin that is capable of provoking the formation of antitoxin in the horse is capable of neutralising it in the immune serum of this animal, while when it is injected into rats it provokes an immunity to infection with the living organism, the essential features of which seem to be resident in the serum of this animal, and to be in turn capable of being neutralised by the endotoxin. The onset and duration of the immunity consequent on the inoculation of plague nucleoprotein were also made the subject of investigation by this observer.

The Opsonic Index.

The opsonic index in plague vaccination was inquired into by Dr. Ralph St. John Brooks, who attempted to correlate the production of immunity in rats vaccinated against plague with the production of immune opsonin in the serum of such animals. The substance producing a rise in the opsonic index in immune plague serum is the nucleoprotein contained in the bodies of the bacilli; but the washed bodies of the bacilli when used as a vaccine do not cause any increase in the opsonic index. Within limits the larger the dose the greater the opsonic response. A second dose of vaccine raises the index above the maximum of the first inoculation even after the curve has fallen to its normal level. In the early stages, in rats, the opsonic response and the degree of protection aroused rise together. In human beings the maximum response is observed to be much later than in the case of laboratory rats, and the response in a series of previously vaccinated persons is somewhat greater than in a series of persons not previously vaccinated. The local and constitutional effects of nucleoprotein vaccination compare very favourably with those observed in other methods of protective inoculation.

The Preparation of Antitoxic Plague Sera.

The preparation of antitoxic plague sera was reported upon by Dr. A. T. MacConkey, the bacteriologist in charge of the serum department of the Lister Institute, who carried out a series of experiments in connexion therewith. From these he concluded that it was possible to obtain a plague antitoxic serum by means of injections of toxin obtained from the plague bacillus by Rowland's sulphate process. In an immunised horse a better response is obtained as regards antitoxin production if an old weakened toxin is used instead of a fresh toxin. Plague serum retains its antitoxic properties for months unimpaired. Heating at 56° C. for half an hour on each of three successive days has no effect on the antitoxin. Plague antitoxin may be concentrated by the same process that is used for concentrating diphtheria antitoxin.

METROPOLITAN HOSPITAL SUNDAY FUND.

THE following are among the amounts received at the Mansion House. Total up to date about £45,000.

	£	s.	d.
St. Michael's, Chester-square	571	0	0
Holy Trinity, Kensington Gore	127	0	0
St. Mary's, Bryanston-square	103	0	0
St. Margaret's, Westminster	100	0	0
Bromley Parish Church, Kent, with Chapel of Ease and Mission	96	0	0
All Saints, Margaret-street	91	0	0
St. Leonard's, Streatham, with All Saints'	79	0	0
St. Peter's, Bayswater	78	0	0
Holy Trinity, Sydenham	74	0	0
Barking Parish Church and Missions	72	0	0
Roehampton Parish Church...	62	0	0
Regent Square Presbyterian Church	56	0	0
Christ Church, Crouch End...	55	0	0
All Souls', South Hampstead	51	0	0
"F."	50	0	0
St. John's, Bromley, Kent	49	0	0
St. Peter's, Ealing	44	0	0
Hammersmith Parish Church with St. Mark's...	37	0	0
St. James's, Muswell Hill	37	0	0
Crouch Hill Presbyterian Church	35	0	0
Highgate Wesleyan Circuit...	35	0	0
St. Paul's, Harringay	32	0	0
Trinity Presbyterian Church, Bromley	32	0	0
Dulwich College Chapel	31	0	0
Christ Church, Ealing	31	0	0
St. John's, Kingston Vale	26	0	0
Annunciation Church, Chislehurst	26	0	0
Park Congregational Church, Crouch End	23	0	0
Camden Church, Camberwell	23	0	0
Blackheath Congregational Church	23	0	0
St. Anne's, Highgate Rise	22	0	0
Dulwich Parish Church	21	0	0
St. Jude's, Herne Hill...	21	0	0
Christ Church, Southgate	21	0	0
St. Andrew's, Alexander Park	20	0	0
All Saints', Leyton	20	0	0

EPSOM COLLEGE.

THE annual general meeting of the governors of Epsom College was held at the office, 37, Soho-square, London, W., on Friday, June 27th. The treasurer, Sir HENRY MORRIS, presided, and was supported by Mr. J. Paul Bush, Sir Francis Champneys, Sir William Church, Dr. William Collier, Dr. Clement Godson, Dr. F. de Havilland Hall, Mr. Horace E. Haynes, Mr. H. E. H. Matthews, Mr. John H. Morgan, Mr. W. A. Propert, Mr. Purnell Purnell, Sir James Reid, Dr. St. Clair B. Shadwell, Surgeon-General Sir Lionel D. Spencer, I.M.S. (retired), Dr. Septimus Sunderland, Dr. Frederick Taylor, and other governors.

The SECRETARY read the scrutineers' report as to the successful candidates for pensionerships, foundation scholarships, and an annuitant as follows:—

Pensionerships.

	Votes.
Simpson, Maria	6,567
Stickland, Clara	5,642

Foundation Scholarships.

Smyth, Samuel D.	13,149
Woodhouse, James Y.	7,410
Clarke-Baylis, Walter E. H.	7,328
Gillam, Geoffrey G.	6,701
Alexander, John V.	5,527
Hare, Kempton P.	5,324
Simmons, John W.	5,234
Blake, Edgar V. M.	5,182
Thyne, William	4,726
Hickling, John W. T.	4,703

Susan Harriette Tait Annuitant.

Black, Maud M.	4,581

In proposing that the report of the Council to the governors for the past year be received and adopted, Sir Henry Morris emphasised the fact that new subscriptions and donations were urgently needed as there had been a slight decrease in the number of donors and subscribers during the past year. He referred to the possibility of contributions being diverted to another medical charity for which they all had the greatest sympathy, in consequence of its having assumed the prefix "Royal," thus causing its title to approximate to that by which the College was known for 50 years—namely, the "Royal Medical Benevolent College." He stated that it might be necessary for the Council to take steps in the near future to emphasise the fact that the Royal Medical Foundation attached to the College has, as its special object, the provision of 50 pensions of £30 a year each for necessitous members, or widows of members, of the medical profession, and a high-class education, together with board, clothing, and pocket money, for 50 necessitous sons of medical men. In commenting on the expenditure of the sum of £6,232 14*s.* 6*d.* on structural alterations and extensions at the College, he remarked that as the College had been built 60 years, and was in an exposed situation on the Downs, it was natural that the cost of maintaining the buildings in good condition should be high, apart from the increased accommodation needed as a result of the extension of the methods of education, and the rapid growth of the numbers in the school. In 1904 there were 227 boys, in 1908 the number had increased to 264, whilst there had been a steady slight increase from year to year until last year, when the number reached 294. One could not visit the College and inspect the teaching arrangements without coming to the conclusion that the educational work of the College is of a highly satisfactory standard. It was impossible for boys to have a better education than that provided on both the classical and modern sides. He referred to the fact that extraordinary expense again has to be incurred, as the chapel spire is in a dangerous condition, and during the gales which were prevalent in March and April the lower school gymnasium was completely blown down. Furthermore, it would soon be necessary to extend the accommodation in the College chapel, and he was looking forward to the time when an isolation block for infectious cases could be provided, as well as a pavilion for the playing fields, worthy of the College and its position amongst the great secondary schools of England. In conclusion, he said that the profession might well be proud of Epsom College, and that the subscribers and donors could rest assured that their contributions would be expended to the best possible advantage.

The report stated that the general work of the College and the discipline had, as usual, been satisfactory; that cricket, football, and hockey had been played with vigour and success; and that the various school institutions were in a flourishing condition. Last year there were over 150 members in the Officers' Training Corps, of whom 5 passed the examination for certificate "A." Since the last annual general meeting H. W. Hodges had gained a classical exhibition at Hertford College, Oxford, and A. J. M. Lander had taken a similar exhibition at Sidney Sussex College, Cambridge. Seven boys had passed the whole or a part of the first examination for medical degrees of the University of London; 22 boys had passed the matriculation examination of the same University, 3 of them being in the first division; 14 boys had gained the higher certificate of the Oxford and Cambridge Schools Examination Board; 15 had obtained school certificates; and 18 had gained lower certificates.

After the formal business had been transacted, including the re-election of eight of the retiring members of the council and the election of Surgeon-General Sir Arthur M. Branfoot and Sir Francis H. Champneys to vacancies on the council, a vote of thanks to Sir Henry Morris for the valuable services rendered to the College as treasurer was moved by Sir WILLIAM S. CHURCH, seconded by Sir JAMES REID, and carried by acclamation. In responding the CHAIRMAN referred to the willing assistance which he received on all occasions from the council and the various committees, as well as to the services rendered by the permanent staff at the office in London and at the College.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,352,766 persons, 8974 births and 3858 deaths were registered during the week ended Saturday, June 28th. The annual rate of mortality in these towns, which had steadily declined from 13·5 to 11·6 per 1000 in the four preceding weeks, further fell to 11·3 per 1000 in the week under notice. During the thirteen weeks of the quarter just ended the mean annual death-rate in these towns averaged 13·5, against 13·3 per 1000 in London during the same period. Among the several towns the death-rates last week ranged from 4·4 in Enfield, 4·6 in Cambridge, 5·4 in Hornsey, and 6·0 in Swindon and in Bath, to 16·4 in Sunderland, 16·9 in Huddersfield, 17·4 in West Bromwich and in Dewsbury, and 20·5 in Oldham.

The 3858 deaths from all causes were 121 fewer than the number in the previous week, and included 306 which were referred to the principal epidemic diseases, against 308 and 307 in the two preceding weeks. Of these 306 deaths, 105 resulted from infantile diarrhœal diseases, 81 from measles, 68 from whooping-cough, 31 from diphtheria, 15 from scarlet fever, and 6 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 0·9 per 1000, and coincided with the rate in the two preceding weeks. The deaths of infants under two years of age attributed to diarrhœa and enteritis, which had been 105, 100, and 90 in the three preceding weeks, rose to 105 last week, and included 24 in London and its 14 suburban districts, 11 in Liverpool, 9 in Stoke-on-Trent, 6 in Birmingham, 4 in Preston, and 4 in Sheffield. The deaths referred to measles, which had been 97, 83, and 87 in the three preceding weeks, fell to 81 last week; of this number 24 occurred in London, 8 in Liverpool, 8 in Salford, 5 in Stoke-on-Trent, 4 in Aberdare, and 3 each in West Bromwich, in St. Helens, and in Manchester. The fatal cases of whooping-cough, which had been 66, 56, and 77 in the three preceding weeks, declined to 68 last week; 13 deaths were recorded in London, 7 in Birmingham, 6 in Sheffield, 5 in Newcastle-on-Tyne, 3 in Liverpool, 3 in Salford, and 3 in York. The deaths attributed to diphtheria, which had steadily declined from 41 to 23 in the four preceding weeks, rose to 31 last week, and included 7 in

London, 3 in Gloucester, 3 in Birmingham, 3 in Liverpool and 2 each in Stoke-on-Trent, in Manchester, and in Preston. The deaths referred to scarlet fever, which had averaged 22 in the six preceding weeks, declined to 15 last week, of which number 2 were registered in London, 2 in Willesden, and 2 in Liverpool. The fatal cases of enteric fever, which had been 12, 15, and 8 in the three preceding weeks, further fell to 6 last week, and included 2 in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 1427, 1418, and 1499 at the end of the three preceding weeks, had further increased to 1604 on Saturday last; 286 new cases were admitted during the week, against 202, 186, and 273 in the three preceding weeks. These hospitals also contained on Saturday last 817 cases of diphtheria, 467 of measles, 283 of whooping-cough, and 36 of enteric fever, but not one of small-pox. The 891 deaths from all causes in London were 64 fewer than the number in the previous week, and were equal to an annual death-rate of 10 3 per 1000. The deaths referred to diseases of the respiratory system, which had been 153, 122, and 127 in the three preceding weeks, were 126 last week, and coincided with the number recorded in the corresponding week of last year.

Of the 3858 deaths from all causes in the 96 towns, 186 resulted from various forms of violence, and 350 were the subject of coroners' inquests. The causes of 38, or 1·0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, Nottingham, and in 56 other smaller towns. The 38 uncertified causes of death last week included 9 in Birmingham, 5 in Gateshead, 4 in Liverpool, 3 in Rochdale, and 2 each in Bootle, in Warrington, and in Darlington.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1215 births and 646 deaths were registered during the week ended Saturday, June 28th. The annual rate of mortality in these towns, which had been 15·9, 14·3 and 14·8 per 1000 in the three preceding weeks, further rose to 14·9 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these Scotch towns averaged 16·3, against 13·5 per 1000 in the 96 large English towns. Among the several towns the death-rate last week ranged from 7·4 in Perth, 9·8 in Clydebank, and 10·2 in Falkirk, to 16·6 in Glasgow, 18·1 in Greenock, and 29·7 in Hamilton.

The 646 deaths from all causes were 3 in excess of the number in the previous week, and included 72 which were referred to the principal epidemic diseases, against 67 and 75 in the two preceding weeks. Of these 72 deaths, 35 resulted from measles, 15 from whooping-cough, 12 from infantile diarrhœal diseases, 5 from scarlet fever, 4 from diphtheria, and 1 from enteric fever, but not one from small-pox. These 72 deaths from the principal epidemic diseases corresponded to an annual death-rate of 1·7, against 0·9 per 1000 in the 96 large English towns. The deaths attributed to measles, which had been 36, 29, and 34 in the three preceding weeks, were 35 last week, and included 26 in Glasgow, 4 in Aberdeen, and 3 in Dundee. The deaths referred to whooping-cough, which had declined from 40 to 22 in the four preceding weeks, further fell to 15 last week; of this number 6 were registered in Glasgow, 2 in Paisley, and 2 in Motherwell. The fatal cases of diarrhœa and enteritis (among infants under 2 years of age), which had been 12, 6, and 8 in the three preceding weeks, rose to 12 last week, and included 6 in Glasgow. The 5 deaths attributed to scarlet fever were slightly in excess of the average in recent weeks, and comprised 2 in Edinburgh, 2 in Dundee, and 1 in Greenock. The deaths from diphtheria, which had averaged 7 in the four preceding weeks, declined to 4 last week, of which 2 occurred in Aberdeen. The fatal case of enteric fever was registered in Ayr.

The deaths referred to diseases of the respiratory system, which had been 98, 68, and 86 in the three preceding weeks, slightly declined to 78 in the week under notice; 27 deaths resulted from different forms of violence, against 27 and 20 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,199,180 persons at the middle of this year, 624 births and 384 deaths were registered during the week ended Saturday, June 28th. The annual rate of mortality in these towns, which had been 17·1, 18·5, and 16·5 per 1000 in the three preceding weeks, rose to 16·7 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these Irish towns averaged 19·1 per 1000; in the 96 large English towns the corresponding rate did not exceed 13·5, while in the 16 Scotch towns it was equal to 16·3 per 1000. The annual death-rate last week was equal to 14·9 in Dublin (against 10·3 in London and 16·6 in Glasgow), 16·9 in Belfast, 16·3 in Cork, 15·3 in Londonderry, 10·8 in Limerick, and 26·6 in Waterford, while in the remaining 21 smaller towns the mean death-rate was equal to 20·0 per 1000.

The 384 deaths from all causes were 4 in excess of the number in the previous week, and included 27 which were referred to the principal epidemic diseases, against 19 and 23 in the two preceding weeks. Of these 27 deaths, 11 resulted from infantile diarrhœal diseases, 8 from measles, 4 from scarlet fever, 2 from diphtheria, 1 from enteric fever, and 1 from whooping-cough, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·2 per 1000; in the 96 large English towns the corresponding death-rate did not exceed 0·9, while in the 16 Scotch towns it reached 1·7 per 1000. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 10, 7, and 6 in the three preceding weeks, rose to 11 last week, and included 7 in Dublin and 2 in Belfast. The deaths referred to measles, which had been 9, 2, and 7 in the three preceding weeks, were 8 last week, of which 3 were recorded in Waterford and 2 in Londonderry. The 4 fatal cases of scarlet fever, 3 of which occurred in Belfast and 1 in Galway, were slightly in excess of the average in recent weeks. The 2 deaths referred to diphtheria were registered in Belfast and Larne respectively, and the fatal cases of enteric fever and whooping-cough in Belfast.

The deaths referred to diseases of the respiratory system, which had been 62, 71, and 61 in the three preceding weeks, were 60 in the week under notice. Of the 384 deaths from all causes, 120, or 31 per cent., occurred in public institutions, and 9 resulted from different forms of violence. The causes of 13, or 3·4 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 1·0 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council of April 1st, 1881, Surgeon Ambrose Cyril Wilson has been allowed to withdraw from His Majesty's Naval Service with a gratuity (dated June 22nd, 1913).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Captains to be Majors:—Alexander W. Sampey and Henry Rogers (dated June 27th, 1913), and Alfred W. A. Irwin (dated July 1st, 1913).

The undermentioned Lieutenants are restored to the establishment (dated July 1st, 1913):—Robert B. Price and William V. Corbett.

Captain William W. Boyce is placed temporarily on the half-pay list, on account of ill-health (dated June 29th, 1913).

Colonel H. M. Sloggett has taken up duty as Assistant Director of Medical Services to the Belfast District. Colonel F. J. Jencken has joined at Colchester.

Lieutenant-Colonel H. H. Adamson has been appointed Senior Medical Officer at Strensall. Lieutenant-Colonel J. Thomson has been appointed officer in charge of the Royal Army Medical Corps Depôt at Aldershot in succession to

Lieutenant-Colonel G. D. Hunter, D.S.O. Lieutenant-Colonel R. J. W. Mawhinny has been selected for charge of the Military Hospital at Nasirabad Cantonment. Lieutenant-Colonel M. J. Sexton has taken over command of No. 22 Company of the Royal Army Medical Corps at Wynberg. Lieutenant-Colonel C. A. Young has been appointed Deputy Assistant Director of Medical Services to the Welsh Division.

Major H. S. Thurston has been appointed to the Dublin District. Major H. G. Martin has been selected as Camp Commandant to the Royal College of Surgeons (Ireland) Contingent of the Officers Training Corps during the training season. Major F. J. Whelan has been appointed to hold charge of the Military Hospital at Jhansi Cantonment. Major G. E. F. Stammers has taken up duty as Deputy Assistant Director of Medical Services (Sanitary) to the Fourth (Quetta) Division. Major T. B. Unwin is to hold charge of the Military Hospital at Mount Auriol, Sierra Leone Protectorate. Major F. J. Palmer has been granted five months' leave of absence home from India. Major P. C. Douglas has been transferred from Jubbulpore Cantonment to the Military Hospital at Nowgong. Major H. E. Staddon has left Dover for a tour of service in India. Major J. S. Johnston has been granted two months' general leave of absence in India. Major H. O. B. Browne-Mason has been appointed Deputy Assistant Director of Medical Services (Mobilisation) to the Sixth (Poona) Division. Major T. Biggam has taken over charge of the Reception Station at Bordon Camp. Major W. E. Hardy has joined at Cawnpore Cantonment. Major S. A. Archer has been granted six months' general leave of absence home from India.

Captain A. G. Wells has been appointed Specialist in Advanced Operative Surgery to the Lahore Division of the Northern Army. Captain F. R. Laing has joined the Military Hospital at Lucknow Cantonment. Captain A. D. Stirling has arrived home on leave of absence from Khartoum. Captain T. McM. Phillips has been transferred to the Military Hospital at Cawnpore Cantonment. Captain J. R. Foster has been appointed to hold charge of the Military Hospital at Neemuch Cantonment. Captain W. J. Dunn has left Mhow Cantonment for a tour of service in Burma. Captain T. E. Harty has joined at York. Captain J. S. Gregg has taken over charge of the Bacteriological Research Laboratory at Brigade Headquarters, Karachi Cantonment. Captain H. V. Stanley has arrived home on general leave of absence from Egypt. Captain E. C. Whitehead has left the Military Hospital at Glasgow for service in India. Captain H. E. Priestley has been transferred from the Military Hospital at Tidworth, Salisbury Plain, to the Military Hospital at Warwick. Captain A. C. A. Amy has been granted seven and a half months' leave of absence home from Ranikhet Cantonment. Captain G. F. Dawson has been transferred from the Military Hospital at Meerut Cantonment to Chakrata for duty. The following Captains have been selected to attend the next course for promotion to the rank of Major at the Royal Army Medical College: G. de la Cour, W. Egan, A. Dawson, F. Forrest, A. S. Williams, V. G. Johnson, C. R. M. Morris, E. W. M. Paine, F. D. G. Howell, and P. Sampson. Captain T. T. H. Robinson has been appointed to the Military Hospital at Sheffield. Captain F. J. Stuart has been transferred from the Military Hospital at Muttra Cantonment to Agra. Captain J. James has arrived home for duty from Potchefstroom. Captain H. W. Russell has been placed under orders for a tour of foreign service. Captain J. J. D. Roche has arrived home on leave of absence from Gibraltar. Captain R. S. G. Gregg has been transferred from the Eighth (Lucknow) Division to the Military Hospital at Karachi Cantonment. Captain A. Hendry has been granted six months' general leave of absence home from India. Captain C. E. L. Harding has been permitted an extension of his tour of service in India for one year. Captain C. McQueen has joined at Aldershot.

Lieutenants T. J. Hallinan, W. T. Graham, and T. A. Weston have been appointed to the Military Hospital at Lucknow to undergo a course of instruction in Indian sanitation. Lientenant D. T. Richardson has joined the Military Hospital at Edinburgh. Lieutenant E. G. S. Cane has been placed in charge of the Bacteriological Research Laboratory at Brigade Headquarters, Colaba, Bombay. Lieutenant J. Hare has been appointed to the Belfast District. Lieutenant W. Bisset has left Woolwich for a tour of service in India. Lieutenant W. B. Laird has taken up duty in the London District. Lieutenant C. H. Harold has been appointed Specialist in Dermatology and Venereal Diseases to the Lahore Division of the Northern Army in India. Lieutenant R. B. Phillips has been appointed to the Cork District. Lieutenant R. C. Carlyle has joined the London District. Lieutenant D. T. M. Large has been transferred from the Military Hospital at Glasgow to Glencorse. Lieutenant R. T. Vivian has joined at Kildare on transfer from the Curragh Camp. Lieutenant E. V. Whitby has been transferred from Cork to the Military Hospital at Fermoy. Lieutenant W. L. E. Fretz has joined at Rawal Pindi Cantonment.

INDIAN MEDICAL SERVICE.

Surgeon-General Sir C. Pardey Lukis, K.C.S.I., Director-General, has arrived home on six months' leave of absence from India.

Lieutenant-Colonel H. B. Melville has been appointed to hold Civil Medical Charge at Delhi. Lieutenant-Colonel C. H. James, civil medical advisor to H.H. the Maharajah of Patiala, has been selected for appointment as Civil Surgeon at Simla in succession to Lieutenant-Colonel C. Duer. Lieutenant-Colonel J. Davidson, D.S.O., has been appointed to hold Civil Medical Charge at Lahore in succession to Lieutenant-Colonel W. Ronaldson Clark. Lieutenant-Colonel J. T. Calvert, principal of the Government Medical College at Calcutta, has been granted nine months' leave of absence combined with furlough home from India. Lieutenant-Colonel J. Crimmin, V.C., C.I.E., has been appointed to officiate as Health Officer of the Port of Bombay.

Major C. H. Bensley has been appointed to the Central Jail at Nagpur for duty. Major J. H. McDonald has been granted 18 months' leave of absence home from India. Major E. A. C. Matthews has arrived home on general leave of absence from India. Major E. O. Thurston has been appointed to officiate as Professor of Surgery at the Government Medical College, Calcutta, during the absence of Lieutenant-Colonel R. Bird, C.I.E., M.V.O. Major V. H. Roberts has been appointed to hold Civil Medical Charge of the Chhindwara District additional to his duties as civil surgeon at Seoni.

Captain A. J. V. Betts has been appointed Resident Surgeon, St. George's Hospital, Bombay, and Professor of Materia Medica at the Grant Medical College, Bombay. The services of Captain F. W. Sumner have been placed permanently at the disposal of the Government of the United Provinces of Agra and Oudh. Captain J. S. O'Neill, superintendent medical officer of travelling dispensaries, Benares District, has been placed on special plague duty at Lucknow. Captain D. L. Graham has arrived home on general leave of absence from India. The services of Captain L. Hirsch have been placed at the disposal of the Government of Madras. Captain R. J. Binning has been appointed a Specialist in Midwifery and Diseases of Women and Children. Captain C. F. Marr, medical officer, 90th Regiment of Punjabis, has been appointed to officiate as Medical Storekeeper to the Government of India at Lahore Cantonment, vice Major A. A. Gibbs. Captain J. L. C. Little has been granted six months' extension of leave of absence home from India on medical certificate. Captain H. M. Brown has been appointed to officiate as Deputy Sanitary Commissioner in Bihar and Orissa during the absence on leave of Captain W. C. Ross.

The services of Lieutenant J. V. Macdonald have been placed at the disposal of the Chief Commissioner of Assam for employment on the North-East Frontier. Lieutenant P. F. Gow has been appointed Specialist in the Prevention of Disease, and has been placed in charge of the Bacteriological Research Laboratory at Brigade Headquarters, Allahabad Cantonment.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Lieutenant Ian D. Dickson to be Captain (dated June 17th, 1913).

The undermentioned Lieutenants are confirmed in their rank:—Samuel Wright, Frederick Jefferson, and Walter E. Elliott.

The undermentioned to be Lieutenants (on probation):—Norman Veitch Lothian, late Cadet Sergeant, Glasgow University Contingent, Officers Training Corps (dated May 8th, 1913), and Cadet Robert Taylor, from the Glasgow

University Contingent, Officers Training Corps (dated June 9th, 1913).

TERRITORIAL FORCE.

Royal Army Medical Corps.

Lieutenant-Colonel and Honorary Surgeon-Colonel William R. Smith, on completion of his period of service as Sanitary Officer of a Territorial Division, is retired, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 2nd, 1913). Major Peter Caldwell Smith, from the 2nd London Sanitary Company, Royal Army Medical Corps, is appointed Sanitary Officer of a Territorial Division (dated July 2nd, 1913).

2nd London Sanitary Company, Royal Army Medical Corps: Major Charles E. Goddard, from the Unattached List for the Territorial Force, to be Major (dated July 2nd, 1913).

Attached to Units other than Medical Units.—Captain Donald G. Campbell to be Major (dated May 20th, 1913). Captain Charles E. Humphreys to be Major (dated June 7th, 1913). Major John L. Thomas, C.B., resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform (dated July 2nd, 1913).

ARCHIVES DE MÉDECINE ET PHARMACIE NAVALES.

In the April number Dr. Kergrohen (Surgeon-General in the French Navy) continues his account of the hospitals on the China station, in Annam, Tonkin, Hong-Kong, and at the Chinese ports. He is very pleased with the situation and equipment of the Naval Hospital at Hong-Kong and is much struck by its cleanliness and comfort. He thinks patients are better off there than in the Civil Hospital, where there are fewer nurses, though the accommodation is in other respects just as good. It is interesting to note that the word "nurses" appears to have been adopted into French. The "wonderful work" done at Hong-Kong which has got rid of malaria is also mentioned. In Canton he found the Hospital Paul Doumer (named doubtless after the great French proconsul); it is exclusively for Chinese and forms part of a French training school for Chinese physicians. He describes it as "vast," but does not give even an approximate number of the beds established in this or in the other hospitals described. This is a great pity. For the sake of junior officers we would say that in the report on a hospital the most important single fact that can be stated is the number, however approximate, of its beds. The want of a definite statement of size diminishes or prevents interest in an otherwise quite instructive story. There is also a small French hospital for Europeans on the Shameen Island at Canton. Dr. Barbe, staff-surgeon in the French Navy, reports at length five cases of gonorrhœal rheumatism treated successfully (loss of pain, swelling, and fever) by the antimeningococcus serum of Dopter.

THE ORDER OF THE MEDJIDIEH.

The King has given to Captain R. G. Anderson, R.A.M.C., permission to accept and wear the decoration of the Fourth Class of the Imperial Ottoman Order of the Medjidieh, which has been conferred upon him by the Khedive of Egypt in recognition of valuable services rendered by him.

REWARDS FOR SERVICE IN THE ANTARCTIC.

The following have been notified for special promotion:—Surgeon George Murray Levick (promotion to Fleet Surgeon on Nov. 21st, 1915, subject to his qualifying for advancement to Staff Surgeon). Surgeon Edward Leicester Atkinson (promotion to Staff Surgeon with seniority of May 12th, 1913, on qualifying for that rank).

THE INSURANCE ACT IN CORNWALL.—The first meeting of the Insurance Committee for the Liskeard and Fowey district was held last week, when it was reported that 73,585 insured persons had been registered in Cornwall and 148 medical practitioners and 65 chemists had accepted services; it was also stated that the Act was working well, and the medical men, with only a few exceptions, were thoroughly satisfied with the treatment they received. Dr. Roper, the tuberculosis medical officer, who was present at the meeting, gave an account of the sanatorium benefits, and remarked that it was more important to make a patient's home into a sanatorium than to send the case away for treatment.

Correspondence.

"Audi alteram partem."

ST. GEORGE'S HOSPITAL AND THE KING'S FUND.

To the Editor of THE LANCET.

SIR,—While I cannot consider Sir Henry Burdett's courteous and restrained letter as a reply to mine or as calculated to alter my natural if "regrettable" bias, there are one or two points which call for explanation. With regard to his first point, I regret that I have hastily attributed to him a statement in a leading article in the *Hospital*, a paper generally believed to express Sir Henry Burdett's views. Audited accounts depend for their value on the accuracy and completeness of the figures submitted for audit, and it is precisely on a point of this kind that some of the present difficulty turns. I was careful to insist that Sir Henry Burdett spoke as a governor of the hospital and not as a representative of the King's Fund. He appears to think that I have misrepresented him. If so, he owes me some thanks for giving him the opportunity to state his true views, as I did not write until I had assured myself that my impressions were shared by many who were present at the meeting. A letter to you, Sir, seemed to be the only way by which, under the conditions of this unfortunate dispute, any appeal to the true paymasters of the Fund could be made. Sir Henry Burdett possesses greater facilities, and it is, perhaps, my unfortunate bias which prevents me from considering that his attitude of detachment is such as to make him a suitable arbiter in a controversy in which the same body is both defendant and judge.

I am, Sir, yours faithfully,

London, June 30th, 1913. CHAS. SLATER.

SIR VICTOR HORSLEY AND MR. McKENNA.

To the Editor of THE LANCET.

SIR,—If the questions at issue were only personal I should leave the Home Secretary's accusations to recoil upon their author, but as it is vital to the professional safety of the Fellows and Members of the Royal College of Surgeons of England that unanswered slanders should not be bandied about secretly among their colleagues and concealed from the accused persons, I cannot allow Sir Rickman Godlee's letter to pass without comment. I say *secretly* because for six weeks I was kept in ignorance of Mr. McKenna's communication to the College. The principal facts are clear—namely, that the Home Secretary accused Mr. Mansell Moullin and myself of having made complaints against the professional conduct and skill of two medical practitioners. We made no such complaints, and the inaccuracy of the Home Secretary's accusations has elsewhere been demonstrated.[1]

The President of the College says I have "a fixed idea" that he is conspiring against me. I consider this description of my attitude is calculated to damage me in the eyes of my professional colleagues. The Home Secretary sent the accusations to the President on May 5th. On either May 5th, 6th, or 7th Sir Rickman Godlee held a consultation at the Home Office with Sir Edward Troup, in the course of which (I am informed by Mr. Mansell Moullin) he told the Home Office that that Department could bring a libel action against us.

The documents were subsequently placed before the Council at its regular meeting on May 8th.

With regard to Sir Rickman Godlee's statement that he replied to my letter asking to be informed of the charges against me before he received my solicitor's first letter, I made my statement relying upon the dates of posting. I accept Sir Rickman Godlee's statement that the letter, which did not reach me until the

[1] Manchester Guardian, Globe, &c., June 23rd.

following morning, was written on the previous day, before the receipt of my solicitor's first letter.

I am, Sir, yours faithfully,

VICTOR HORSLEY.

Cavendish-square, July 2nd, 1913.

A PLEA FOR THE APPOINTMENT OF A ROYAL COMMISSION ON VENEREAL DISEASE.

To the Editor of THE LANCET.

SIR,—It is to be earnestly desired that Sir Malcolm Morris's plea for a Royal Commission on Venereal Diseasewill be strongly supported by the medical profession.

Since the repeal of the Contagious Diseases Acts in the early "eighties" several circumstances, such as the study of eugenics and the writings of certain popular authors have combined to educate and prepare the people for the unprejudiced and intelligent appreciation of the objects of a Royal Commission on these disorders. They inflict untold suffering, do infinite harm, and are the cause of an equivalent annual loss of some £7,000,000. Finally, they are preventable, and should be extirpated and erased from the nomenclature of diseases affecting mankind. In April, 1911, some correspondence took place in your contemporary, the *British Medical Journal*, on the control of venereal diseases. I was actuated to take part in this correspondence because I had in mind a paper entitled "Syphilis and the State,"[1] during the preparation of which I studied the reports of the Commission on the Contagious Diseases Acts, and I remembered that the chief arguments used by those who succeeded in getting these Acts repealed were that the diseases were difficult and impossible to diagnose, that the result of treatment was uncertain so far as rendering a person incapable of spreading the infection, and that for these reasons innocent people were erroneously and futilely subjected to the hardships and taint of being inspected and placed in lock hospitals. I considered that the newly discovered methods of diagnosis and treatment would nullify these objections and arguments, and that if they did not justify a renewal of the Contagious Diseases Acts they at least warranted some legislative principle which would control the spread and perpetuation of venereal diseases.

Personally, I believe that each case should be notified, and that a printed card stating the nature and danger of the disease should be given to every venereal patient. By this means every fresh case should be traceable to its source of infection, and the guilty person, being unable to plead ignorance, should be held guilty of inflicting bodily injury on another and be punished accordingly. I would not penalise a person for contracting the disease, but for spreading it.

I am, Sir, yours faithfully,

SEYMOUR STRITCH,
Member of the Board of Governors (formerly R.M.O.), the Lock Hospital, Dublin.

June 28th, 1913.

To the Editor of THE LANCET.

SIR,—Those who are familiar with the prevalence and ravages of syphilis cannot read Sir Malcolm Morris's temperately worded appeal without agreeing with its general tenour. I have already advocated free treatment at all our general hospitals upon the following grounds. In no other infective disease are such brilliant (may we say permanent?) cures seen as those which follow the appropriate treatment of syphilis—results alike encouraging to the patient and the physician. In the absence of correct treatment a sufferer may remain a danger to the community for months, possibly years. Under proper care immediate infectivity can be arrested in a very short time, and the influence upon the future generation abolished. From the standpoint of the hygienist there appears to be no reason why syphilis cannot be as easily and effectually stamped out as hydrophopia and small-pox. Hospital care in certain stages of syphilis is imperative among poorer patients, and will amply repay the sufferer and the community. I believe an incalculable amount of good would be done if hospitals, and especially the skin department of general hospitals, would ungrudgingly receive cases of active and early syphilis.

I am, Sir, yours faithfully,

R. PROSSER WHITE.

Wigan, July 2nd, 1913.

To the Editor of THE LANCET.

SIR,—I trust that you will accord me a little space to support the plea of Sir Malcolm Morris and your own leading article for the appointment of a Royal Commission on Syphilis. The time is surely ripe for the consideration of this difficult subject in the light of the recent advances in its early diagnosis and of the introduction of a means of treatment which has diminished the time of infectivity of the early stages to manageable limits. It is suggested that the lines upon which the health authorities should proceed are those taken in Australia. Of course, it is important to determine whether compulsory notification, even if secret, might not act in a contrary sense to that desired, and that infected persons would be strongly tempted to dispense with treatment except at the hands of the unqualified. What seems to me of greater importance is the education of the public, and the insistence of the profession upon the enormous risks which are run by late and insufficient treatment. Again, every assistance should be given to the profession in the diagnosis of the disease. It is every whit as important for the community that the practitioner should be able to get a suspected chancre examined for spirochætæ or to have the Wassermann test applied as it is to have a swabbing examined for the Klebs-Löffler bacillus or a Widal examination made in a suspected case of typhoid. In a paper read on Dec. 16th, 1911,[1] before the Plymouth Medical Society I urged this, for it is impossible for the practitioner to perform with the necessary accuracy the examination himself. In the large towns there would be no great difficulty in obtaining these examinations, and the few cubic centimetres of blood required for the Wassermann test could be sent through the post to certain centres with the greatest of ease.

Again there are, as Sir Malcolm Morris so forcibly puts before us, extremely few facilities for the adequate treatment of syphilis in our general hospitals. To properly carry out Ehrlich's treatment it is essential that there should be beds available. I have before me a copy of the by-laws of a large general hospital in London which contains the following words: "No persons ..... suspected to have the venereal distemper, small-pox, itch, or other infectious disorder ..... shall be admitted on any account whatever." Where these regulations are still in force the authorities urge that all such cases should be sent to special institutions or to the Poor-law infirmaries, proceedings which are found in practice to deter the sufferer from treatment. In my opinion, there should be no bar whatever to the admission of cases of this kind requiring treatment, whether in special wards or under certain circumstances even in the general wards.

I am pleased to see that attention is focused upon syphilis insontium, which is far too little considered in all the controversies which have raged round this subject. I need hardly refer to the cases in which members of our profession, dentists, students, nurses, midwives, and maternity nurses have been infected in discharge of their duties, such are only too common. I would particularly draw attention to three groups of cases which come under observation in private practice and in the hospital out-patient department. I will call them for brevity's sake (1) domestic, (2) marital, and (3) occupational, and offer the following illustrations, which could easily be multiplied in the experience of most physicians and surgeons attached to a large hospital. (1) Domestic: A woman with a baby at the breast, her little daughter aged 5, and another daughter aged 12, came to my department at the London Hospital. The mother had a well-developed secondary eruption, the baby was gravely ill with the hereditary disease, the elder girl who assisted her sister with the children had a primary sore on the lip, and the little girl had a primary chancre in the mouth. I could not get the father of the family to attend. "He could not leave his work." (2) Marital: A young woman, the wife of a baker,

[1] Transactions of the Royal Academy of Medicine in Ireland, vol. xxv.

[1] Practical Results of the Recent Advances in the Diagnosis and Treatment of Syphilis, THE LANCET, 1912, vol. i., p. 153.

came under my care with a secondary eruption, sore-throat, &c. She had been married three months. I got the husband to attend, and he was found to be suffering from untreated syphilis. I may add that he was continuing his avocation as a baker. This is, of course, the commonest type of case. (3) Occupational: My colleague, Dr. Theodore Thompson, permits me to mention the case of a boy aged 15, a glassblower's apprentice, who attended as an out-patient with a primary chancre on the lower lip. His duty (which I have learned in another instance is the custom) was to take the blowpipe from a senior employee and continue blowing before removing the blown bottle. I mention this case because the elder worker was induced to come to the hospital and was found to be suffering from active syphilis of the buccal cavity following a genital chancre. It is a grave injustice to debar such cases from treatment in a general hospital and to send them to a lock hospital or to a Poor-law infirmary.

The larger question of the treatment of the prostitute has two aspects—preventive and curative. Preventive measures are the business of the State, and involve such important issues that it is impossible to discuss them here. As regards treatment, we as a profession can only insist on the best opportunities being given to all alike for the speedy cure of their disease. No obstacle on moral grounds or penal restrictions should be put in the way, and it is here that we may meet with opposition. Public opinion is, however, progressive, and a public opinion which has sanctioned the payment of maternity benefit to an unmarried worker may be brought to see that it is for the good of the State that this grave malady should be boldly attacked in its most prolific source. On every ground a careful inquiry is necessary, and I heartily support the plea for a Royal Commission.

I am, Sir, yours faithfully,

JAMES H. SEQUEIRA.

Manchester-square, W., June 29th, 1913.

To the Editor of THE LANCET.

SIR,—Now that so distinguished a leader as Sir Malcolm Morris has raised his standard in revolt against the tyranny of cant and prudery, it is to be hoped that a campaign will be waged with courage and determination until a decisive victory for common sense has been achieved. That one of the most widespread contagious diseases, which is at the same time terrible in its consequences, should be selected for special exemption from notification is a monstrous anomaly and an insult to the intelligence of all persons of sober and unbiased judgment.

When speaking at the discussion on the Present Position and Treatment of Syphilis, which took place before the Royal Society of Medicine in June, 1910, I emphasised the fact that we live in the days of preventive medicine, and that it speaks ill for the ccurage and dignity of the medical profession that it has allowed unpractical extremists to dictate to it on such an important question of public health. I stated as my opinion that a united medical profession could insist upon syphilis being ranked as a notifiable disease with efficient regulations and penalties to ensure that the present untrammelled licence to hand on infection shall be ended. True freedom has always been opposed to injurious licence, and legislation with the object of ensuring the health of the individual and the race cannot be considered an encroachment on the liberty of the subject.

In October, 1910, Dr. T. W. Parkinson gave an address entitled "A Plea for the Adoption of a Contagious Diseases Act," as his presidential address to the Chelsea Clinical Society, and at the next meeting of the society Mr. J. H. Dauber read a paper on the Notification of Syphilis. I then gave it as my opinion that the licensed house system was not of practical value, that the licensed houses were used chiefly by strangers in the country, and that it was the unlicensed amateur who spread infection. The scheme which I then advocated, and still believe to be practical, consisted of—

1. Immediate notification to a special medical officer of health for venereal diseases.
2. Heavy penalties for omission to notify and for treatment of syphilis by unqualified persons.
3. After notification the syphilis medical officer should obtain from the infected person the source of infection.
4. The source of infection then, in turn, to be visited, inspected, and informed as to his or her state as regards infection.
5. Any infected persons would be given the choice of free treatment at a hospital or, if preferred, would be allowed to attend any medical man they wished as a private patient.
6. Infected persons would then be told that if, up to the time that they were given a certificate of freedom from infection, they conveyed the infection venereally to any other person, such infection was a criminal assault, punishable by a term of three months' imprisonment.
7. Equal treatment for both sexes.

As in the great majority of cases of venereal infection the infectious party must have full knowledge as regards infectivity, and that such infection is only passed on by a voluntary act, it appears that venereal disease, far from being the most difficult of the contagious diseases to control, is the most easy. Is there any other contagious disease that can be so absolutely dated to a specific voluntary act?

I am, Sir, yours faithfully,

HUGH WANSEY BAYLY.

Upper Berkeley-street, W., June 28th, 1913.

THE SIGHT TESTS OF THE BOARD OF TRADE.

To the Editor of THE LANCET.

SIR,—I have read several letters in THE LANCET relating to the sight tests of the Board of Trade, and having had considerable experience of sight testing for railway men to the extent of several hundreds every year for over 17 years, I think I should quote my results. Unfortunately, being now on leave I cannot get at the exact figures, but roughly 10 per cent. of the men tested fail to pass 6/6 Snellen's type and 5 per cent. colour vision, which includes the combined tests of naming colours of wool skeins and the lamp test at night. The naming of colours is most important; many cases of colour blindness can match colours fairly well, recognising shades in wools, but absolutely fail when both old and new red and green flags are used as a test. Another very important point in vision-testing is the presence in about 1 per cent. of cases of a defective distant colour vision. Men who can recognise colours in the wool test and in the 1/8th in. aperture lamp test at 30 yards cannot distinguish the colours of flags, nor the red coats of men on duty in the rifle range shooting butts at 300 yards and upwards, nor the lamp lights at long ranges. This fact I pointed out some ten years ago in the *Indian Medical Gazette*, and it is one which may account for several accidents to ships and trains where obviously pilots and drivers have mistaken distant lights and signals. The men concerned were subsequently found able to pass the near vision tests. As far as I know, this is an original observation, and perhaps Dr. F. W. Edridge-Green, with whose letter in THE LANCET of June 21st I am in complete agreement, might like to confirm this observation.

I am, Sir, yours faithfully,

H. G. WATERS,

June 22nd, 1913. Medical Officer, Jamalpur, India.

THE LATE SIR JONATHAN HUTCHINSON.

To the Editor of THE LANCET.

SIR,—The late Sir Stephen Mackenzie once said, towards the end of his career, "I began my professional life as Mr. Hutchinson's pupil, I remain his pupil still." This illustrates the affectionate respect and attachment which old London Hospital men felt for the surgeon whose commanding ability long gave him the first place at their school. He held that place by virtue of his surgical skill—a bold operator in pre-Listerian days, witness his performance of laparotomy for intussusception—and by the faculty of teaching which he possessed in an uncommon degree, patiently expounding and enforcing the principles of his art. But it was his personality which especially counted, and which drew to him the crowds of students who followed him round the wards. Other lectures might be ill-attended, but "Jonathan" had plenty of auditors. We believed in him, and took him for a model of medical life and conduct. He was not exactly genial or very approachable, being originally of a shy nature, and disliking all his life functions of any kind. He was, indeed, of rather silent habit, quiet, and unhurried; somewhat oracular to his patients, but with no such impressive qualities of manner and emphasis as those which gave to his friend and energetic colleague, Sir Andrew Clark, much of his *éclat*. Yet there was a magnetism about Hutchinson, the magnetism of a nature wholly

possessed by the search for truth, of a mind keenly observant, accurate in detail, yet apt to generalise, and many of whose generalisations had taken rank as discoveries. For already in the "seventies" you could hardly open a book on any department of medical science without finding Hutchinson referred to. His temperament was balanced, candid, and free from prejudice; he made no mystery of his teaching, but was ready to expound all he knew; and one felt in listening to him that here was a man on the frontiers of science always pushing out into fresh areas of knowledge. His language was lucid and precise, spiced every now and then with dry humour or with a reference to his favourite poet Browning. He made his points clearly, and his frequent "I repeat," though it may have become a mannerism in his later years, helped to make effectual impressions upon the student mind.

It was his habit in his systematic lectures on surgery often to pick out on entering the theatre one of his auditors and to ask him questions, and under cover of these questions and of the discussion of incorrect answers to build up his theme for the day. Certainly, it was a method which fixed the attention of his hearers. Students were an unruly lot in those days, and many of our lecturers were uncivilly treated or had practical jokes played upon them—some we almost declined to hear. One of the lecturers on physiology—peace to his memory—the men had no respect for; he could not keep order, and the theatre was sometimes a bear garden. But no pranks disturbed the calm progress of "Jonathan's" discourse. It is said that once, and once only, a trick had been played with the preparations he was showing. It was never repeated.

Upon not a few subjects Hutchinson spoke as a master. It was our fault entirely if we, his pupils, did not attain to a full grasp of the subject of syphilis, its stages, its symptoms and manifold disguises, and their treatment. He read a paper before the Hunterian Society early in the "seventies," which laid down the treatment of the secondary stage of the disease, and I remember well the cases in the London Hospital on which it was based. We very seldom see now the physical wrecks, due either to syphilis or ill-judged mercurial remedies, which were then not uncommon. And if the effects of this scourge in the community are to-day much lightened, whilst we may be glad to ascribe this, in part, to an improved standard of morals, much is also due to the fuller understanding of the disease and its treatment, and in this Hutchinson had a part surely not second to that of any worker in this country. Of his researches in skin and eye diseases I do not speak.

Few men have been so fully absorbed by their quest of knowledge, or have so effectually trained their powers of observation. Like John Hunter he took note of the whole animal world. Birds, flowers, fossils—he was something of an expert in all. History attracted him, and was expressed in his "space for time" chronologies, or displayed by series of portraits. On education and social topics he had thought much, and he had a plan for State bounties upon children, intended to promote their increase, as the chief wealth of a nation.

The influence of Hutchinson upon several generations of students was great, and in this way it has passed on into other lives, communicating to them his own appetite for knowledge, unsatisfied with the moderate repast which is enough for most men. They learned also his clinical instinct, his attitude towards disease—a close and patient observation of nature, scrupulous and accurate record, and how upon these may be built up the theory of a morbid process.

Perhaps as in the case of Darwin some sides of his nature may have been less developed; there was little of emotion or enthusiasm, but there was the power of a master mind, and not a few will unite with me in owing much of any professional success that has attended them to the teaching and example of Jonathan Hutchinson.

I am, Sir, yours faithfully,

June 30th, 1913. R. HINGSTON FOX.

To the Editor of THE LANCET.

SIR,—In your obituary notice in to-day's issue of THE LANCET of the late Sir Jonathan Hutchinson, F.R.S., as regards the medical aspect of his useful life and his ruling principle of searching every subject for Truth you rightly say that much must necessarily be omitted about his past attainments, but I trust you may again be able to allude to other manifestations of his well-stored mind and his desire to impart his knowledge for the good of mankind.

His free Sunday lectures, in his museum at Haslemere, upon every possible subject—scientific, in every branch, especially geology, astronomy, and botany; social, in its development and many problems; moral, in its past and present; education, in its proper aim and method; topics of the day; the character and works of good citizens, artists, and public men; the lives of poets and their sayings—all these were the most delightful and instructive treats to listen to, delivered in the most charming, intensive, logical, and convincing manner; and every one of his sayings was Truth itself, and they have only been fully confirmed by lapse of time, as many instances might show. His "Nature Rambles," too, about his grounds were a revelation of the beauty and purposes of structure and function in the works of the Great Creator.

His "Home University," which he edited in monthly parts, was most instructive and admirable, but pressure of time unfortunately forbade him continuing it more than a year. No man made so much or so good a use of great talents, or did more for the real benefit of the world, and in a modest way, too.

His obituary card, devoid of "mourning," was characteristic:—

In loving Memory of
Jonathan Hutchinson, F.R.S.,
Who died at "The Library," Inval, Haslemere,
the Twenty-third of June, 1913,
in his 85th year.

"I th'rst for Truth,
But shall not drink it till I reach the Source."

"What though the radiance which was once so bright
Be now for ever taken from my sight,
Though nothing can bring back the hour
Of splendour in the grass, and glory in the flower;
We will grieve not, rather find
Strength in what remains behind—
In the primal sympathy
Which having been, must ever be;
In the soothing thoughts that spring
Out of human suffering;
In the faith that looks through death;
In years that bring the philosophic mind."

I am, Sir, yours faithfully,

Winchester, June 28th, 1913. W. MORTON HARMAN.

THE NEW NAME OF THE THRUSH FUNGUS.

To the Editor of THE LANCET.

SIR,—Recently there has been a disposition to bring into use a new name for this organism—endomyces albicans. Dr. Aldo Castellani used it in his communication on tropical bronchomycosis,[1] and again in his paper at the meeting of the British Medical Association last summer. It has now appeared in a text-book. There is already confusion enough, and the new name induced me to examine the fungus again in six typical cases of thrush in young infants.

Nature of the organism.—Unusual pleomorphism is proved by the many names (including sporotrichum) which have been applied to it. The thready, branching, septated hyphæ seen on mucous membranes suggested its oidium-like character. Three type forms had the name oidium in the past. The grape vine mildew is the oidium of Link (1809). The mould of sour milk was the oidium lactis of Fresenius (1850). The thrush fungus was the oidium albicans of Robin (1853). In the first and second erect, aerial hyphæ—the simplest form of conidiophore—are always present, but botanists distinguish between these two, and the first, being the oldest, alone retains the name oidium. The second is now oospora lactis, the genotype of the group which includes streptothrix forms, the powdery surface on cultures of the latter being well known.

Cultures of the thrush fungus never have aerial hyphæ, but are always smooth like yeast. About 1870 Reess was also impressed by the yeast-like cells so abundant in cultures and the scarcity or absence of hyphæ. Also, he thought he saw, or actually did see, endospores; pure cultures were not so common then. So he referred it to saccharomyces, and the name S. albicans is still sometimes used. After the introduction of pure culture methods endospores were not

[1] THE LANCET, Jan. 6th, 1912, p. 13.

found. Besides, under certain conditions its mycelial form was much too pronounced for any unicellular budding fungus. Thus it was ejected from saccharomyces once and for all. Meanwhile Hausen's work on Monilia candida had thrown light on the life-history of these organisms, and when Zopf in 1890 referred the thrush fungus to monilia every competent observer accepted the name M. albicans.

It only remains to say that Vuillemin, of Nancy, reported to the Academy of Sciences of Paris[2] his rediscovery of endospores, and referred it to endomyces. It may be explained that an endomyces bears much the same relation to a monilia that a saccharomyces does to a torula—the one forms endogenous spores and the other does not. Practically this is the dividing line between fungi imperfecti and the higher fungi. Mlle. Daïreuva, of the same medical school of Nancy, confirmed Vuillemin's observations in her thesis in the following year (1899). With this exception, and for 14 years, neither Vuillemin nor anybody else has seen endospores in cultures of the thrush fungus.[3]

The point has been missed that Vuillemin's organism is not the typical thrush organism at all. He describes it as neither fermenting sugar nor liquefying gelatin. In every one of six typical cases examined recently the organism present was a pathogenic, gelatine-liquefying, maltose-fermenting monilia in cultures of which yeast conidia predominate always and hyphæ are often suppressed. The same organism is not uncommon in the mouths of adults. Through the kindness of Mr. K. W. Goadby I obtained cultures of two yeasts described by him as pathogenic in the gums. Both are identical with this thrush fungus.

Mr. A. G. R. Foulerton has described a pathogenic yeast which he isolated from a sore throat.[4] His description and the excellent microphotograph by Mr. Barnard are in every respect applicable to the thrush fungus.

In conclusion, if it is admitted that Vuillemin discovered a pathogenic endomyces, it is certain that in thrush no such organism is commonly present. For obvious reasons Zopf's nomenclature has not yet fallen into disuse.

I am, Sir, yours faithfully,

ROBERT CRAIK, M.D. Glasg.

Uxbridge-road, Ealing, W., June 30th, 1913.

BREAST FEEDING AND GALACTAGOGUES.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 14th, in an article on Breast Feeding, Dr. David Forsyth states: "With no means of increasing or modifying the natural supply (of milk) bottle feeding is the first and only resource when an infant fails to thrive on breast milk." In a leading article on this subject in the same issue the statement is made: "We have no knowledge of any drug which will influence the secretion of milk."

Notwithstanding the fact that these are probably the commonly accepted opinions of the profession at large, I venture to state that in lactagol (a dry extract of cotton seed) the profession has a safe and reliable means not only of increasing in amount breast milk deficient in quantity, but also of appreciably raising its fat ratio.

This conclusion I have reached as the result of a series of experiments carried out on some 40 cases at Queen Charlotte's Hospital and in private during the past year. In view of my highly satisfactory experiences with lactagol, I feel that I cannot allow to pass unchallenged the general statement that "We have no knowledge of any drug which will influence the secretion of milk."

I am, Sir, yours faithfully,

Chelsea, June 20th, 1913. HUGH H. RIDDLE, M.D.

*** In a laboratory report in THE LANCET of Sept. 7th, 1912, we alluded, when giving the analysis of lactagol, to experiments brought to our notice which went to show that this substance improved the quantity and quality of milk secreted, and suggested further trials being made.—ED. L.

[2] Comptes Rendus, 1898.
[3] Guilliermond, Les Levures (1912), p. 497.
[4] Experimental Blastomycosis, Journal of Pathology and Bacteriology, 1899.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 1767.*)

XIV.—BLACKPOOL AND ITS CROWDS OF TEMPORARY RESIDENTS.

The Fluctuating Population of Blackpool.

IN its way Blackpool is one of the most extraordinary places in England. As everyone knows, it is the great holiday ground of the working classes who throng the crowded manufacturing towns of Lancashire and Yorkshire. It has been told over and over again—but is none the less true—that during all the year many a mill hand and factory worker sets aside so many pence or shillings a week so that for one week in the year he shall have a thorough holiday regardless of expense. This resolve not to count the cost applies not merely to eating, drinking, and going to shows, but, should illness supervene, the money is sometimes offered to the medical attendant in the same lavish manner. The social and economic conditions brought about by the influx of such guests are obvious. There are no manufactories, no mills, no special industries at Blackpool. Nevertheless, the residential population is set down in the Census of 1911 at 58,376, and it is now supposed to have increased to about 64,000. There are 14,012 dwellings, which are nearly all occupied; but when we are told that the average population is 4·5 per house, such a figure conveys quite a wrong impression. Many of the houses are practically empty except for a brief period during the year. During that season quite small houses will take in 20, 30, or even 40 visitors, and the reception of visitors constitutes the one great and all-pervading industry of Blackpool. Blackpool is not perhaps peculiar here—one has heard the same story about other seaside resorts—but the position exists in a very aggravated form. No one seems to know positively how many visitors go to Blackpool in the course of the year, but the general impression is that all told they must number close upon three millions; and it is calculated that on the August Bank Holiday, what with the day trippers and others, there are quite a quarter of a million strangers in Blackpool. When by the side of these enormous figures it is noted that the Blackpool Insurance Committee has only about 14,000 insured persons on their books, it will be seen at once that the residential population constitutes but a small problem when compared with that created by the presence of so many visitors. The position is intensified by the fact that nearly all these visitors come, of course, during the three months of July, August, and September; and as these are the three months when certain epidemic conditions (for instance, epidemic diarrhœa) and illnesses caused by impurity of food are most likely to occur, it will be seen that Blackpool may well present some problems to the medical man and sanitarian.

How Workmen's Holidays Affect the Medical Practitioner.

The three million visitors, it is calculated, spend on an average £1 each in the town. If this seems a small sum it must be borne in mind that a great number are day trippers who only remain a few hours. For those who stop longer each of the principal manufacturing towns has a week of its own. Thus this year Bolton will be in residence at the beginning of July and Oldham at the end of August. During the holiday week special trains are run from the particular town, the money it has taken a year to save is drawn the day before, and all the workers with their families start off in grand style, many driving triumphantly to the station in cabs. During their absence their town must seem strangely silent and deserted, while the return is in many cases not so brilliant in its features as the exodus had been. There rarely remains any money for cabs. The luggage, which at the departure was piled on cabs regardless of expense, is now left somewhere in or near the railway station, and the smallest child sits on the heap to guard it, while the stronger members go backwards and forwards carrying the articles home one by one. The streets which had been deserted are peopled again with the returning and penniless holiday-makers, the shops all expect to give credit, and the medical man had to do the same in most cases. The position now

under the National Insurance Act is singular. A considerable portion of the money painfully and patiently earned during 51 weeks in such towns as Bury, Burnley, Oldham, and Bolton is spent in one single week, and this not in the town where it was made, but at Blackpool. Of course, the deserted localities suffer in common with the tradesmen from this annual tribute paid to Blackpool. The practitioners on the panels of the manufacturing towns are not therefore pleased to be told that they cannot be paid for more than 51 weeks in the year, as a reserve fund must be created so as to pay the Blackpool doctors who attend their patients during the holiday week. The Blackpool practitioners, it is maintained, are not in desperate want of these fractions of 7*s.*, because they share in the prosperity brought by the holiday-makers, and payment at contract price does not represent their due. They claim they are entitled to more, as there is more sickness in the one week of holiday than during the average working week of the year.

Overcrowding, Overeating, Overdrinking.

At home the mill-hands have a very simple diet, depending largely on their own home-made bread. Some of the holiday makers bring this bread with them to Blackpool, together with a sack of home-grown potatoes. Bed and breakfast can be obtained for 2*s.* a day, several sleeping in one room, and sometimes so closely packed that the beds touch one another. A great deal of the intense overcrowding that used to constitute a veritable scandal has been abolished, and when a practitioner is called into a house he is no longer so likely to tread on some form asleep on the staircase landing. There have been cases when men and women, strangers to each other, have slept in the same room with only a blanket slung across to separate them. In such lodgings the tenants can have no meals except breakfast. For the rest they go to restaurants and cookshops, or content themselves by buying pieces of tinned meat to eat on the sands with bread and fruit. But they are apt to eat unwisely of these things and to commit veritable orgies with cockles and other shellfish. As they are not accustomed to such food the want of restraint in the quantity that they eat has serious consequences, and it will be seen that even without excess of drink there is good cause for the prevalence of digestive trouble. Nine out of ten cases of illness among the population visiting Blackpool during the summer may be ascribed to overeating or overdrinking, or both. Thus, when the medical practitioner penetrates these overcrowded rooms where men or women, some sick, some unsober, lie side by side, we have scenes which, though on shore, recall the worst phases of life on an emigrant ship.

Special Features of Practice at Blackpool.

The busy hours for the Blackpool practitioner during the season are from eleven at night to five in the morning. Then the calls arrive in rapid succession, for the sufferers and their friends, being away from home, are especially fidgety. "Come at once" is the usual message, and this makes the work very exacting. Then the patients being strangers have not yet acquired confidence in the medical adviser who attends to them. But the fact that they are strangers has facilitated the establishment of the ready cash system. There are no such things as doctors' bills and the accompanying array of bad debts. Besides, if a man is ill he cannot spend his money in the public-house or on the attractions of the fair, but as it is a point of honour apparently among the men on these holidays to get rid of every penny they have got they are quite willing to pay their doctors. As one practitioner graphically put it to me: "I believe they would throw their money out of the train rather than go home with it." But medical practice among such patients, though paid for, is not easy. Another practitioner insisted on the dirty habits of some of them, as shown in the readiness with which they will sleep anywhere, spit anywhere, and, when suffering for their pleasures, vomit anywhere. But it must not be imagined that there are only cases of indigestion among them. There is also a good deal of ptomaine poisoning, while miscarriage and abortion are frequent. There are the donkey rides and the switchbacks to bear the blame for abortions which are sometimes due to quite a different cause. In these cases operative procedures and anæsthetics are often required. I was told that many young women who have "got into trouble" come to Blackpool and somehow get out of trouble, attributing their deliverance to the exciting or terrifying influence of the toboggan and other emotional "rides." The medical men of Blackpool are quite on the look-out for wholly false information in these cases.

The Position of the Blackpool Practitioners under the National Insurance Act.

Taken altogether the position of the Blackpool practitioners before they were disturbed by the Insurance Act was good. True, during three months of the year they were terribly overworked, for such a thing as a whole night in bed was and is an unknown luxury to many practitioners during the season. But they received full fees and they made no bad debts. A practitioner told me that in one season he had from 250 to 400 patients and usually would not expect to make a single bad debt among them. Among the residents in Blackpool, while there may be temporary poverty during the dull season, prosperity returns at an assured date, and when the visitors arrive the residents usually pay off their debts; so that in Blackpool there are few poor, no paupers, and the rates only amount to about 5*s.* in the £. In such conditions there were hardly any medical aid organisations—they were not required—but for these very reasons the National Insurance Act was neither needed nor welcomed. As far as the medical practitioners were concerned there were barely 2000 persons in the whole of the town who belonged to Friendly Societies or to clubs providing medical aid. One of the leading practitioners assured me that he had only 150 club patients, and that he did not believe that anyone, at any time, ever had more than 500 on his list. Club practice was not a matter of importance at Blackpool when the Act arrived to make it the rule instead of the exception. Now the Act has forced some 14,000 persons to become contract patients where there used to be only 2000 contract patients, and when we recall that at first it was proposed that insured persons should pay 4*s.* 6*d.* a year, it is not surprising that all the practitioners at Blackpool were unanimous in their determination not to help in the administration of the measure. Every medical practitioner resigned his club during the time of struggle.

The Blackpool Panel.

Even when the Bill was modified and the sum of 7*s.* was allocated, this much more tempting offer did not break the unanimity of the opposition to the project of insurance. But early in January, 1913, the Blackpool practitioners were informed that arrangements had been made to send 15 medical men to the town to work the Act. Inquiries were made to see if this was not a mere scare. The names of the men ready to act as strike breakers were, it is said, mentioned. They were scattered over Manchester, the north of England, and Wales. To prevent this wholesale importation of outside practitioners the Blackpool doctors yielded and went on the panel, but under strong protest. There are about 50 practitioners at Blackpool; of these, 29 were on the panel in April and 32 in May. Let it be at once admitted that the men who are now on the panel, whose objections to State alteration of a condition of things which was quite satisfactory to the public and to themselves were perfectly reasonable, are more satisfied than they expected to be. Their number, as we have seen, is increasing slowly; but at least one prominent practitioner finds that he is losing by the operations of the Act. So far as he can make out from his first three months' experience he has obtained for every item of attendance on insured persons an average of 1*s.* 1¾*d.* Formerly he received from these persons 3*s.* 6*d.* fees, and striking off 1*s.* 6*d.* for the cost of the medicines he supplied and of the bad debts—admittedly very few—he used to get a clear 2*s.* Thus either his income will decrease or he will have to do much more work for it. But no general rule can be deduced from these figures, for the conditions vary according to the special character of the practice. Other practitioners at Blackpool calculate that they have made 1*s.* 9*d.* and even 2*s.* on an average for attendance on insured patients. The loss is from the class of patients who paid good fees and who have become insured persons, particularly as they now come for the most trivial ailments. In March my informant, who only made an average of 1*s.* 1¾*d.*, said he had 62 attendances out of 85 insured persons. One of them came for a little spot on his forehead which had been there for many years. It is said that this demand for the attendance of the practitioner in trifling cases will not last, but I have not yet seen any signs of its wearing off. I should add that the 1*s.* 1¾*d.* per

visit received by the practitioner whose experiences are quoted above was accounted for by the fact that there were more than 3000 insured persons who had not selected a medical attendant, so that he received his share of what these insured persons had paid, though he had not and could not have rendered them any service. Otherwise the remuneration per item would have been only 10*d*.

The Act Working Badly.

On the Insurance Committee it is not all plain sailing. The Committee thinks the doctors have been generously treated because they get more than the old club contract rates. But the medical men at Blackpool had little or nothing to do with any sort of contract practice, and much object to render account to a lay committee. At the end of March medical representatives were put on the Insurance Committee. Before that time the Committee did not even know what a wage limit meant. They seemed to think the income-tax limit was the wage limit, but there are manual workers who earn more than £160 per annum. Strange to say, professional football players are qualified as manual workers, and at Blackpool a football player is often paid £5 a week. The Insurance Committee at Blackpool will have to acquire knowledge at the public expense, and though this fact was forcibly brought to my mind at Blackpool, the remark must refer to Insurance Committees in all parts of the country. In the meanwhile, the Act is not working to the satisfaction of the public. Complaints are being made on all sides. Some say that they cannot get the benefits to which they are entitled with sufficient promptitude, others say that the medical service is not as good as it was before the Act. The owners of a great number, estimated at about 2000 tickets, cannot be traced. These must have been wrongfully issued. The applicants have presented themselves and have obtained a doctor's signature to a red ticket. The names are entered on a list, but when the list reached the Insurance Committee the name could not be traced.

The medical service is not running properly yet, as is proved by the great number of complaints which patients have addressed to the Insurance Committee. These complaints should have been recommended to the Medical Subcommittee, but for the time being efforts were made to smooth over all difficulties. It may be good policy not to make any fuss, in the hope that matters will right themselves, but it may also be a dangerous policy.

The Movement for a Big Trade Union.

The Act has affected the position of the consultants who are sent for from Liverpool, Manchester, or other places. Naturally the consultants who approved of the Act thought they would be supported by the panel doctors. At Blackpool, however, it has been just the reverse. One consultant especially, who was constantly sent for from Blackpool, has lost ground, I am told, it being known that he was a strong partisan of the Act. But another consultant, who opposed the Act, championed the interests of the profession, and had the courage to fight the Act, is now sent for in preference by the panel doctors. Thus we have the curious spectacle of the panel doctors who work the Act specially selecting consultants to help them who are notoriously antagonistic to the Act. "This shows," exclaimed the Blackpool practitioner who related these facts, "what a trade union could do. The panel doctors are faithful to the man who supported them all through, and the panel doctors are against the Act." What practitioners wanted, he went on to urge, is a legal trade union like that, for instance, of the railway servants.

In the meanwhile the panel doctors at Blackpool are holding well together and have completely defeated the attempt of the insurance authorities to impose medical benefits for temporary residents. On April 30th a joint meeting of Blackpool panel doctors and members of the Blackpool Medical Committee met and passed the following resolution unanimously:—

That this meeting demands a definite guarantee from the Insurance Commissioners that the central fund for the treatment of temporary residents shall be large enough to ensure payment of all doctors' fees for attendance without discount; that a payment on account be made within three months of such attendance; and that until such guarantee is received the panel declines to attend insured persons under the regulations and conditions embodied in Memo 161/J.C.

This resolution has been faithfully carried out. The Whitsuntide holidays have come and gone and not a single visitor has received medical attendance as an insured person but only as a private patient. Obviously there can be no guarantee that the scale of fees proposed will be paid. People who would give themselves the trouble to go through all the forms necessary to transfer their insurance claims for a week or two must be persons of very doubtful health or who are already invalided. A healthy person would not take that trouble; thus there would be but few transfers, and therefore a very small income to meet a disproportionately large amount of illness. Then, as already explained, even among the healthy people, holiday excesses produce an exceptional prevalence of sickness. Finally, those who have enough money to pay for a holiday have clearly proved in the past and the present that they have money enough and are quite willing to pay proper fees, and that, too, without any credit whatsoever. Therefore the Blackpool panel doctors have struck against this part of the National Insurance Act, and so far their strike is entirely successful.

(*To be continued.*)

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University of Liverpool.

THERE is a vacancy for a professor of parasitology at a salary of £600 a year. It is proposed to hold an advanced course of instruction on tuberculosis during the winter months. This course will include laboratory and clinical instruction and instruction in administration; 41 meetings in all. Professor E. W. Hope, Professor J. M. Beattie, Dr. D. Moore Alexander, Dr. C. Rundle, and others, will conduct the courses at Parkhill and Fazakerley Hospitals, at the tuberculosis dispensaries, and at the University laboratories.

New Hospital Appointments.

The losses the medical profession has sustained in Liverpool have caused a rearrangement of the hospital appointments, especially on the medical side. At the Royal Infirmary the death of Dr. O. T. Williams and the creation of an additional appointment caused two vacancies for assistant physicians. These have been filled by the selection of Dr. Pantland Hick, physician to the Stanley Hospital and assistant physician to the Children's Infirmary; he will be associated with Dr. J. Hill Abram. The other appointment has gone to Dr. W. B. Warrington, one of the physicians to the Northern Hospital, where he gives up his beds to become assistant physician at the Royal Infirmary in association with Dr. R. J. M. Buchanan. Dr. Warrington's special work in nervous diseases is well known, and his appointment will no doubt strengthen the teaching staff at the Royal Infirmary. The Northern Hospital has filled the gap by promoting its assistant physician, Dr. John Owen. The vacancies caused by Dr. Hick's appointment have been filled by the selection of Dr. J. Murray Bligh for both the Stanley Hospital and the Children's Infirmary. The death of Dr. Arthur J. Wallace caused vacancies at the Shaw-street Hospital for Women and the Maternity Hospital. Dr. J. Hayward Willett was selected for both. Dr. Willett has served as assistant surgeon at Shaw-street and as a district medical officer at the Maternity Charity. Dr. H. Leith Murray was appointed assistant surgeon at the Shaw-street hospital in place of Dr. Willett.

Examinerships at the Royal College of Surgeons of England.

Professor A. M. Paterson has been selected examiner in Anatomy for the Conjoint Board Examinations, and Dr. W. Blair Bell examiner in midwifery and gynæcology.

The Health of Wallasey.

Mr. T. W. Naylor Barlow has presented his report for the year 1912 on the health of the borough of Wallasey. The death-rate and infant mortality rate are exceptionally low, the former being 11·6 per 1000, the latter 76 per 1000 births, with only 1 death from infantile diarrhœa. Mr. Barlow's remarks on scarlet fever are interesting. He shows that the isolation of scarlet fever in hospital has not been attended by all the benefits which at the time of the establishment of these institutions it was prophesied would result. Many cases are removed to hospital which could with perfect safety be isolated at home, the only reason for sending mild cases being to save parents trouble. In Wallasey, as in

Liverpool, a large number of births are attended by midwives—866 out of 1791. Of the 4 cases of puerperal fever which were fatal, only 1 occurred in the practice of a midwife, and as she was found to have been guilty of neglect in the case her name was removed from the roll.

Prompt Action by the Liverpool Port Authority.

A case occurred recently which emphasised remarkably the value of the work of the port sanitary authority. The medical officer, boarding one of the steamers with 700 people on board, in the course of his routine inspection noticed a man with some spots on his face and had him isolated as a probable case of small-pox. As the patient had mixed freely with the passengers they were all treated as suspects, their names and destinations were noted, and as far as possible the medical officers of health of the districts informed. There have since been cases recorded among these passengers in places as scattered as Haslemere, Leicester, and Kettering. It is quite possible that but for the energetic action of our port authority these cases would have given rise to outbreaks before they were recognised.

July 1st.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Alexandra Days.

THE Queen Alexandra flower festival which was held in Manchester and Salford on June 20th and 21st was a complete success. Over 1,000,000 artificial blooms in the form of wild roses were sold in the city and suburbs, so that the charitable institutions in Manchester and Salford stand to benefit very materially, even when the cost of each bloom is only 1*d*. There was also a great procession through the city of decorated cars and tableaux on wheels accompanied by bands of music. The whole carnival was on behalf of the medical charities, of which there are 21 to participate in the profits. Last year 358,563 patients were treated in these hospitals. The annual deficit on their working amounts to £20,000. It is obvious that this cannot continue, hence efforts in addition to the Hospital Saturday have been made to raise additional funds. In Salford Hospital alone an accident case is admitted on an average in every 35 minutes, while at Ancoats Hospital there are on an average 67 accident cases a day.

A Garden Suburb for Manchester.

Manchester is emulating some other cities and has begun its first effort to found a garden suburb at Alkrington on the north side of the city. The Alkrington housing committee has secured an extensive site of over 700 acres, situated on the hillside between Blackley and Manchester, 300 feet above sea level, where the air is free from the pollution of smoke and where there is a bracing atmosphere. The houses will be built on the coöperative principle. The Coöperative Housing Society came into existence in 1907. It has now 14 affiliated societies, which when they complete their operations will have a capital value of £2,000,000.

Extended Trial of the National Insurance Act by the Medical Men of Manchester and Salford.

The Salford medical practitioners who accepted service under the Act have decided to continue the existing arrangements until the end of this year so that they may be able to test its working on a complete year. They will then consider their position in the light of the 12 months' practice. The result of a postal vote of the Manchester practitioners has been announced. The vote was taken because the existing arrangement terminates on July 15th. At a meeting of the profession the result of the vote was announced, and was to the effect that the practitioners had decided by an overwhelming majority to continue the system until the early part of next year.

Medical Inspection of the School Child.

The medical officer, Dr. A. B. Ritchie, has presented his report for the year ending December, 1912, on the medical inspection and treatment of children to the Manchester Board of Education on June 16th. The number of parents objecting to routine examinations is negligible, and they are in all cases invited to be present at the examination. In 1911 the total number of cases served with a "cleansing notice" was 1571, and in 1912 it was 981, so that there is a great decline in the number of cases called "verminous." The total number of children, excluding those under 5 years of age, was 20,504, and naturally the inspections revealed a great variety of defects. Each inspection on an average takes from seven to eight minutes. In 436 cases the clothing was poor and 445 had poor and insufficient foot-gear. Nearly 1000 children were found to have body vermin. As to nutrition, 987 were distinctly poorly nourished and 5339 were not well nourished. There were 1303 anæmic subjects, many of whom were followed up, and by various agencies their health has improved. The problem of the teeth is always a large one in Lancashire. Of 5-year-old boys and girls 5408 had "fair" condition of the teeth and 1954 were in a bad condition. For 13-year-old children 3615 were fair and 647 were bad—and by "bad" is meant those who had six or more carious teeth. There were 420 children with subnormal hearing. Nits on the head were found in 2587 children. A marked and important feature in the report is that where possible many cases "have been followed up." Nearly 700 cases of skin diseases of one kind or another were detected, including 187 cases of ringworm and 353 of impetigo. There were also 1010 cases of enlargement of the cervical glands and 1567 of the submaxillary gland.

Cheshire Schools: Toothbrush Clubs and Fresh-Air Schools.

The Cheshire education committee at its meeting in Crewe on June 16th recommended that a leaflet be drawn up by the school medical officer dealing with dental hygiene and circulated to all schools in the county; that teachers be invited to interest themselves in toothbrush clubs in connexion with the schools under their charge. The following question was referred to a committee for report—viz., the methods of construction applicable to both old and new school buildings, which would not only ensure the rooms being supplied with fresh air at all times, but would also permit of their being used as the equivalent of open-air class-rooms. The committee decided to call the attention of the Board of Education to the "gross injustice to local education authorities which is involved in the abolition of the 'epidemic grant' and in the present system of calling upon authorities to provide treatment for sick children, and then reducing the grant payable to the authorities on account of the absence of such children from elementary schools."

June 30th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Infirmary.

THE surgical staff of the Royal Infirmary is shortly to be increased by the appointment of two more assistant surgeons. These appointments are preliminary to a general reorganisation of the teaching on the surgical side of the hospital, particulars of which will shortly be given in these columns.

Burgh of Edinburgh Insurance Committee.

At a meeting held on June 26th considerable discussion followed upon the submission of the following report by the Medical Benefit Subcommittee:—

1. That insured persons who are unallocated shall be grouped into four districts for the purposes of allocation, and that they shall be allocated as far as possible to panel doctors resident in these districts.
2. That panel doctors whose lists at present number 2000 or more shall not participate in the allocation.
3. That as regards the numbers at present on their lists, panel doctors shall be divided into four groups, viz.: (*a*) Those with less than 500; (*b*) with 500 up to 1000; (*c*) with 1000 up to 1500; (*d*) with 1500 up to 2000; and that allocations shall be made in the ratio of four to group (*a*), three to group (*b*), two to group (*c*), and one to group (*d*).
4. That the Insurance Committee reserve the right to refuse to any practitioner on the panel a share in the allocation without giving specific reasons for so doing.

It was stated that 20,000 insured persons had not chosen a doctor. Dr. J. M. Bowie, seconded by Dr. Matheson, moved that unallocated persons be assigned to doctors in proportion to the number of patients at present on their lists. It was argued that these insured persons who had not chosen a doctor were presumably good lives, and that the question of allocation really meant the allocation of funds and not of patients in any number of consequence. On a vote, 21 voted for the minute and 10 for the amendment.

Gift to Edinburgh University.

Edinburgh University Court have not yet decided how best

to utilise the residence of the late Right Hon. William M'Ewan, which has been presented to the University. It is generally understood that Mr. M'Ewan had an idea that it might eventually become the residence of the principal. However, the University has been for many years in possession of 21, Lansdowne-crescent as a house for the principal, and although Sir Alexander Grant, the late principal, had his residence there, since the appointment of Sir William Turner in 1903 the house has been to let.

Panel Practitioner Sued by Insurance Patient.

An interesting legal point came up before the Sheriff's Court in Glasgow where an insured patient sued his panel doctor for alleged breach of contract. The pursuer averred that he was an insured person under the National Insurance Act, and that the defender was the medical man selected by him as his panel doctor. He required medical treatment in the month of February, 1913, but the defender failed to give him any treatment between Feb. 4th and 11th, with the result that the pursuer had to call in another medical practitioner who was not on the panel, and owed him an account of £2 10*s.* The defender's plea was that pursuer had no title to sue, but that the proper party to sue was the Glasgow Burgh Insurance Committee. The sheriff on the preliminary point stated that the pursuer founded his title to sue on the averment of a contract completed between the defender and himself, in the course of and through the statutory procedure. The defender maintained that there were no contractual relations between the parties, and that he could only be called to account by the Glasgow Burgh Insurance Committee with whom is his agreement to render the services which are alleged to have been withheld. His lordship was of opinion that pursuer's interpretation of the legal position was a correct one, and proceeded to point out that the National Insurance Act gives to the insured not only the right to medical benefit, but the right to receive that medical benefit through the services of the medical practitioner of his choice under an agreement arranged no doubt by the Insurance Committee, but to which both the insured and the practitioner are consenting parties. It was difficult to see how one individual could receive certain services from another individual, coupled with the consent of the latter to render those services as a matter of right to the former, without there being a contract and a title to sue for damages in the event of the contract not being implemented. If, then, the intention and requirements of the Act were carried out by the regulations and in the procedure adopted by the Insurance Committee to bring the insured and the doctor together, the sheriff was of opinion that the pursuer's title to sue was unanswerable.

Scottish Dental Association.

The Scottish Branch of the British Dental Association held its annual meeting in Dundee recently, when Dr. W. Graham Campbell, of Dundee, was elected president, and Mr. W. T. Finlayson honorary secretary.

Dundee Royal Asylum.

The annual report of the Dundee Royal Asylum states that the expenditure for the year was £4738 1*s.* 1*d.*, being £45 1*s.* 6*d.* more than last year, and the income was £5229 6*s.*, being £197 7*s.* 11*d.* more than last year. The cost of maintenance of inmates is, however, to be increased in the future. The existing agreement with the Dundee Royal Infirmary has been renewed for another year, the charge for each patient being raised from 25*s.* to 30*s.* per week.

New Dental Dispensary for Dundee.

With a view to arranging matters with regard to the proposed new dental dispensary in Dundee, a meeting was held last week in the town hall. It was reported that £375 13*s.* had already been received in donations, and a further £34 promised. Principal J. Yule Mackay moved the resolution that a dental hospital be instituted in Dundee, and in doing so remarked that the proposal was a social reform of a far-reaching kind. The primary object of the institution was to inaugurate a reform. The disease which affected teeth, small in the beginning, led to disastrous results. It was through the avenue of the mouth that some of the most serious diseases that affected mankind arrived. Diseases of nutrition which must of necessity follow disease of the mouth opened the way to serious disease which could not be repaired. The British Government would not employ a soldier with diseased teeth, and in the battlefield of life he who had disease as regarded his mouth and teeth had little chance of survival in the struggle. The principal paid a tribute to the dentists of Dundee, who have practically all promised to support and do the work of the hospital. The hope was expressed that a dental school in connexion with the hospital might be established. The resolution was unanimously carried. The initial cost of equipment for the hospital is estimated at £300, and the annual maintenance at about £400. It is also proposed to acquire premises at a cost of £900.

July 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The National Insurance Act.

As it is evident that nursing societies may be financially injured by the National Insurance Act, it was suggested at the annual meeting in connexion with the Society for Nursing the Sick Poor in Holywood, held on June 26th, that the different nursing associations in county Down should take concerted action in order to put their claims in a forcible manner before the Insurance Committee of the county council so as, if possible, to get a grant in aid. It was also proposed that Approved Societies should be approached and asked to subscribe 3*d.* per head per insured member, and it was urged that a certain portion of the maternity benefit received under the National Insurance Act should also go to the society. It is, however, most improbable that Approved Societies—who are finding so much of their funds dwindling away in sickness benefit—would ever listen to such suggestions. The secretary of one of the largest new Approved Societies in Ireland writes to the Belfast papers of June 27th urging that independent actuaries should be appointed to examine the estimates which the Government intends to place before Parliament and to report thereon. He mentions many defects of the present Act which are not remedied in the amending Bill.

Hopefield Cottage Hospital, Portrush.

On Thursday, June 26th, an attractive variety *fête* (comprising sale of work, cycle parade, athletics, cake fair, museum, putting-green, palmistry, shooting gallery, and half-hour concerts) was held in the grounds of the Hopefield Cottage Hospital, Portrush, in aid of the funds of that excellent charity, which latterly has been greatly handicapped by the lack of funds. There was a very large attendance, and a considerable amount has been realised.

The Medical Dispute at Londonderry.

The struggle in Londonderry between the Friendly Societies, who have imported two medical men, and the local doctors, who have established a public medical service, continues, and the leaders of the Friendly Societies are doing their best to induce their members to arrange that they shall go on the panel of the imported doctors. Of the 13,000 insured persons only 6000 identification cards have been lodged with the town clerk. In a couple of weeks the Local Insurance Committee is to allocate arbitrarily for medical certificates those who have not yet selected a doctor, and the local medical practitioners ask that these 7000 shall be assigned them, so many to each, but what course will be taken remains to be seen.

July 1st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Appendicular Sciatica.

AT the Société Médicale des Hôpitaux on June 20th M. Enriquez and M. Gutmann read observations on a number of patients who presented no abdominal symptoms, but sought advice only on account of long-standing intractable sciatica. As abnormal radiating pains, neuralgia increased on lying down, with slight pain in the right iliac fossa and muscular contraction, were noted, the authors resorted to radioscopic examination. They found with the screen that the abdominal pain was localised in the lower extremity of the cæcum, which did not

change its position, but remained fixed when it was mapped out in the Trendelenburg posture. The authors operated on three of the patients in whom the pains in the thigh were particularly severe. In these three cases adhesions binding down the cæco-appendicular region low on the posterior wall were found at the operation. After resection of the appendix and freeing of the adhesions the patients were cured of their sciatica. M. Enriquez and M. Gutmann investigated the symptomatology, diagnosis, and pathogeny of this syndrome, and urged the necessity for radioscopic examination of the cæco-appendicular region in cases of sciatica presenting certain abnormal symptoms, speaking highly of the surgical treatment of such cases.

New Legacy for the Academy of Medicine.

A new legacy has been made to the Academy of Medicine. Mdlle. Louise Morand leaves the residue of her property, after the satisfaction of all liabilities, to be devoted as the Academy of Medicine shall determine to societies or undertakings engaged in the treatment of children suffering from or threatened with tuberculosis.

The Treatment of "Port-wine Marks."

M. Albert Weil presented to the Société de Médecine de Paris on June 13th three cases of port-wine marks in which he had obtained almost total blanching of the skin with very satisfactory æsthetic results by the use of X rays. He used a tube with a special window, which allowed the passage of only the slightly penetrating rays. Very few sittings were required.

The Maison du Médecin.

This admirable and relatively recent foundation for the maintenance of aged or impoverished medical men at a minimal cost has recently benefited materially by a subsidy of 180,000 francs, granted by the Commission de Répartition des Fonds de Jeux, to enable it to acquire the Château des Charmettes at Valenton, whither its establishment is to be transferred. It is a splendid domain, very comfortable, close to Paris, a *rus in urbe*, with facilities for all necessary extension for its increasing demands. It will probably be opened in October.

The Unveiling of the Monument to Dr. Guinard.

On June 24th a monument to Dr. Guinard was unveiled on the very spot in the court of the Hôtel Dieu where he was assassinated some two years ago. Speeches were delivered by M. Habert, municipal councillor, on behalf of the City of Paris; by M. Mesureur, representing the Assistance Publique; by M. Strauss, in the name of the Conseil de Surveillance; by M. Landouzy for the Faculty of Medicine; and by M. Delorme, on behalf of the Société de Chirurgie, in all of which the admirable private and professional qualities that characterised the late Dr. Guinard were extolled. On first leaving St. Etienne, his home, Guinard said that within 30 years his address would be "Dr. Guinard, Surgeon of the Hôtel Dieu, Paris." This prediction was fulfilled, and this monument and the memory of his tragic end will henceforth be inseparable from the Hôtel Dieu. The monument shows a weeping woman offering a palm to Dr. Guinard.

Retirement of Professor Lacassagne.

Professor Lacassagne has retired. For thirty years he has occupied the chair of legal medicine at the University of Lyons. His researches have made him universally renowned, and the scientific world pays him homage on his retirement. To him it is due that the responsibility of half-witted criminals is now more justly and properly appraised. He has helped to strengthen the defences of society. Legal medicine has become through him, and through those who have followed the path he marked out, a science indispensable to the life of a country. The teaching of Lacassagne covers a vast field, but the following axioms sum up its principal doctrines:—Every action injurious to the community is a crime; every crime is an obstacle to progress; the social *milieu* is the culture fluid of criminality; the microbe is the criminal, a factor of small importance apart from the culture fluid which permits it to ferment; and society has only the criminals that it deserves.

The Medical Examination of Motor-car Drivers.

Mr. Bernard Augé has introduced a Bill into the Chamber of Deputies requiring every motor-car driver to append to his application for a licence a medical certificate certifying that he has a good constitution, normal eyesight and hearing, and that he has no organic lesion of the heart, pleural cavity, or kidneys, which could render him liable to sudden syncope; also to establish, as far as possible, his freedom from any neuropathic affection, monomania, hysteria, or epileptic taint. M. Augé thinks that the causes of numerous accidents remain unexplained. The ordinary record of accidents does not show whether excessive speed depends on the character of the wet surface, on a false manœuvre, or on the sudden illness of the chauffeur. M. Augé thinks it probable that in a large number of cases the chauffeur's state of health is at fault. The condition of health has not hitherto been taken into account in granting a certificate of fitness.

July 1st.

UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

The Carnegie Foundation and Medical Schools.

THE report that the Carnegie Foundation would use its enormous fund, said to amount to $140,000,000, to crush sectarianism in medical colleges has been renewed since the announcement of Mr. Carnegie's gift of $1,000,000 to the medical school of Vanderbilt University. Dr. Henry S. Pritchett, head of the Foundation (who with Mr. Abraham Flexner in a recent report stigmatised as worthless some of the American medical schools), while denying any animosity against sectarian colleges as such, says that an investigation may be held into the worthless medical schools that trade on the names of worthy institutions under whose charters they take refuge. It is hinted that men in an official capacity in the colleges concerned reap large profits from the commercialised medical schools. The somewhat sweeping reports of the Carnegie Foundation on American medical schools already have had good effects. Some of the inferior schools criticised in it have gone out of existence; others have taken steps to improve their teaching facilities. The standard of medical education has been raised sensibly during the past decade, though there is yet much room for improvement.

Fund for Medical Education.

Mr. Andrew Carnegie has given £200,000 to the Vanderbilt University, Nashville, Tennessee, for the benefit of the medical department. £40,000 will be available at once to provide for the erection and equipment of new laboratories for the medical school, and the income from the remainder will be used for its maintenance.

Death of Dr. F. Forchheimer.

Dr. Forchheimer died in Cincinnati on June 1st. He was born in Cincinnati on Sept. 25th, 1853, studied at the Universities of Strasburg and Würzburg, and graduated in medicine at the College of Physicians and Surgeons, New York, in 1873. For 20 years he was professor of the theory and practice of medicine in the University of Cincinnati. He was president of the American Medical Association in 1910–11. Dr. Forchheimer was the author of several medical works, among which may be especially mentioned the "Prophylaxis and Treatment of Internal Diseases."

June 17th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

Accommodation and Treatment of Persons of Unsound Mind.

IN April last a Select Committee of the House of Assembly was appointed to inquire into the adequacy or otherwise of the provision in the various Provinces of the Union for the accommodation and treatment of persons of unsound mind. The committee has recently presented a report which is perhaps one of the most valuable Parliamentary reports that have been published in South Africa in recent years. The committee finds that the accommodation at present available in the asylums throughout the Union is quite inadequate to cope with the present demand for admission; that in many cases it is of a character most unsuitable for the mentally afflicted, and that overcrowding exists in most of the institutions to an extent which it is imperative to put a stop

to without delay; that this state of affairs is most acute in the Cape Province, where asylum accommodation has been inadequate for many years; that reports by numerous departmental and other commissions and by many officials have been made to successive Cape Governments, but that no attempt has ever been made to deal with the matter in a comprehensive manner; that on account of the lack of accommodation it has become increasingly necessary to detain mental patients in police cells and in other unsuitable institutions, a practice which was condemned by all the witnesses, medical and lay, who appeared before the committee; and that in the other provinces the accommodation is generally of a suitable character but insufficient. The committee considers that in consequence of this lack of accommodation large numbers of persons who should be under treatment cannot be admitted, while others have frequently to be prematurely discharged before being cured. This has been the main cause of the administrative difficulties which have given rise to the frequent adverse criticisms in the public press. Further, it must be emphasised that the fact that so many insane and feeble-minded persons are at large constitutes a serious danger to future generations. The committee records its opinion that it will be more economical to maintain a small number of asylums accommodating between 800 and 1500 patients rather than a large number of small asylums each with 300 or 400 patients, as is the case at present in the Cape and Free State Provinces; and that the larger institutions, by rendering possible, *inter alia*, a proper classification of cases, would ensure more efficient administrative methods and increase the comfort, well-being, and chances of recovery of patients. Also, that there is no valid objection to the maintenance on the same asylum estate and under one administration of patients drawn from both the European and the coloured sections of the population, provided they are housed apart and are not brought into contact when undergoing treatment, or at meals or entertainments; but that, on the contrary, considerable economy can be expected, inasmuch as suitable coloured patients can be employed with advantage, both to the State and to themselves, on work on such estates, which in the ordinary way would be performed by hired coloured labour. It also considers that, with the exception of the Natal Act, the existing lunacy laws are on the whole adequate, and with suitable minor alterations should form a convenient basis for a uniform law for the Union. Among the more important recommendations of the committee are the following:—

(1) That as a matter of urgent necessity funds should be provided forthwith to relieve the present congestion, and to provide accommodation for the ordinary normal demand as well as a reasonable margin for future requirements.

(2) That additional accommodation at the various centres, to be immediately provided, should form an integral part of a prearranged and carefully considered scheme of continuous development. That for this reason the construction of new asylums and additions to existing institutions should be carried out on the "villa system."

(3) That when the establishment of new asylums is contemplated an adequate area of ground should be obtained so as to secure the privacy of patients, to afford ample room for exercise, recreation, and to afford opportunities for dairying and gardening so as to reduce the cost of maintenance of patients and staff. To facilitate administration and to ensure accessibility, it is desirable that these institutions should be near a town and railway.

(4) That mental hospitals, at which early and acute cases of mental derangement can be received and treated without the necessity for admission into the ordinary wards of an asylum, should be provided at all institutions of this nature.

(5) That in the larger centres where hospitals or asylums are situated steps should be taken to provide suitable accommodation, either in conjunction with the mental hospital block of an asylum, or in conjunction with the mental ward of a general hospital, for use as a place of observation whereat early and acute cases can be detained until it is decided whether further treatment in a mental hospital or in a mental ward of a general hospital is desirable, or whether removal direct to an asylum is necessary.

(6) That the authorities of the general hospitals at the larger centres of population should erect special wards in which suitable cases of incipient mental disease or derangement could be treated and cured, so as to avoid the necessity for sending the patients to an asylum.

(7) That in a Lunacy Act for the Union provision should be made for the appointment of a Commissioner in Lunacy and for local asylums boards.

With the recommendations contained in this report most practitioners will agree. It was sympathetically received by the House, and the Government announced its intention of carrying out the recommendations as soon as possible. But what one cannot agree to is the estimate of accommodation required furnished to the committee by the Department of the Interior. The Census report shows that the number of insane outnumber the available beds in the case of Europeans by 1086 and in the case of coloured patients by 2192, or for all races by 3278. The closing of the asylums at Robben Island, Port Alfred, and Fort Beaufort means a loss of 152 beds in the case of Europeans and 1208 beds in the case of coloured patients, or for all races 1360 beds. Assuming that these asylums are closed as recommended, there would apparently be a shortage in beds for Europeans of 1238, for coloured 3400, or altogether 4638. Yet all the accommodation proposed to be erected and spread over a three years' programme consists of an additional 703 European beds, 2870 coloured beds, or altogether 3573 beds. Now it is common knowledge that there are a very large number of insane persons, especially amongst natives, that have not been certified owing to the difficulty of disposing of the cases, and the bulk of these cases were not returned as insane in the Census report. Moreover, the scheme only contemplates provision for 16·6 per 10,000 inhabitants. Therefore, while expressing relief that considerable expansion in asylum accommodation is about to be provided, one cannot but express also the hope that the Government will not abandon the condemned asylums until it has satisfied itself that the present programme is sufficient, or that, if not sufficient, it will make the necessary additional provision accordingly. The expenditure recommended is £350,000 spread over a period of three years.

Proposed Hospital Ordinance, Orange Free State.

A Draft Ordinance to provide for the establishment and management of hospitals and charitable institutions in the Orange Free State has just been gazetted prior to its introduction into the provincial council of that province. The proposed measure is practically the same as that which became law last year in the Cape Province, but it has certain important differences. In the first place there is to be no medical representation on the boards or institutional committees. In the second place, owing to there being no rural local authorities in the Orange Free State as in the Cape, it has been found impossible to provide for the division of the deficits, if any, between the local authorities of the district and the Provincial Government in equal proportions. Instead, one-third is to be placed upon the municipalities of the district, and two-thirds is to be payable by the Provincial Government. This method of meeting the deficits will result in practice in the hospitals being supported entirely on deficits, one-third by municipalities, and two-thirds by the provincial administration, for there will be no advantage to be gained by a municipality in making an out-and-out grant to a hospital, as would be the case in the Cape Province. Indeed, it will be to the advantage of municipalities not to contribute anything until they are compelled to do so on the deficit, as by this means they will contribute a bare minimum. The medical profession should insist upon a modification of the Ordinance so as to secure proper representation. The Ordinance is not likely to encourage voluntary subscriptions to the same extent as that of the Cape owing to the fact that the method of liquidating deficits will leave the bulk of the expenditure to be defrayed by the Provincial Government.

June 1st.

NOTES FROM CHINA.

(FROM OUR OWN CORRESPONDENT.)

Epidemics of Small-pox and Typhus Fever.

THESE diseases are always present in China, but reports from the northern and central provinces show that during the last three months they have prevailed over a very wide area in epidemic form. In this country small-pox is considered of little account, being regarded as one of the necessary ailments which everyone sooner or later must contract. No precautions are taken against the spread of the disease. Indeed, during this spring it has been a common experience in the Peking district to see children covered with the eruption playing in the streets. Even after death the younger victims of the disease may remain a menace to the health of the community, since it is often considered unnecessary to go to the expense and trouble of a proper funeral, the bodies of children being handed over to men of the beggar class who for a small consideration undertake to dispose of them. Instead of burying the corpses these men generally discharge their duty by going

no further than the nearest unfrequented spot and there leave them to decompose in the open or become food for the village dogs. Recently, near a town not far from Peking where small-pox was raging a foreigner found exposed near his house the bodies of nine victims of the epidemic, all being children of ages ranging from a few months to about ten years. Though it seems that no efforts are made to avoid the spread of the disease, an appreciation of the value of vaccination is rapidly becoming more general, and the old Chinese method of inoculation is proportionately less practised. In a land over the greater area of which there is an absence of isolation hospitals, or, in fact, of public health measures of any kind, it is not surprising that infectious diseases spread with rapidity and never get stamped out even in the lulls between epidemics. Typhus fever is always present, but during this spring it has been specially prevalent over a great part of China. There being no official returns it is difficult to form any just estimate of the extent of this scourge, but reports indicate that it has assumed the dimensions of an epidemic throughout several of the provinces, and especially in Anhui. The recent famine in this province was doubtless a contributing factor.

Deaths of Medical Missionaries.

A number of foreigners have succumbed to typhus fever during the last three months, and among them no fewer than four medical missionaries. These, in the chronological order of their deaths, are Mr. Cecil F. Robertson, M.B. Lond., F.R.C.S. Eng., and Mr. H. S. Jenkins, M.D. Lond., F.R.C.S. Eng., both of Sianfu, Shensi; Dr. Egerton H. Hart, of Wuhu, and Dr. F. H. Hall, of Peking. Medical mission work in China has suffered a severe blow by the loss of these brilliant members of our profession. Dr. Jenkins, of the English Baptist Mission, after studying at Bristol, qualified in 1898. He had held resident posts at the Bristol Children's Hospital and St. Mark's Hospital, London, and had been registrar and pathologist to the Mount Vernon Hospital for Consumption. Dr. Robertson, the youngest of the four, received his medical education at the Middlesex Hospital and qualified in 1907. He had been house surgeon at the Middlesex Hospital. Dr. Hart, who spent the last 18 years of his life in charge of the Wuhu General Hospital, was himself the son of a missionary in China. So widely was he known that his name as a distinguished surgeon was almost a household word throughout a great part of the Yangtse region. His skill, his striking personality, his knowledge of the language and of the people render his death a particularly severe loss both to the profession and to the missionary cause in China. Dr. Hart died on April 14th after an illness lasting nine days. The attack of typhus fever which caused Dr. Hall's death on May 26th was probably contracted from patients in the hospital or out-patient clinique of the Union Medical College in Peking, where for the past four months he had acted as dean of the faculty. Dr. Hall was in the prime of life, being only 35 years of age. He had the advantage of seven years' experience in China added to ability of a high order, and everything seemed to indicate that his career in the medical education of the Chinese would be a brilliant one. Dr. Hall was a member of the American Presbyterian Mission and graduated at the Johns Hopkins University.

Peking, May 27th.

LITERARY INTELLIGENCE.—Messrs. William Hodge and Co. announce for publication a new volume of the series of Notable English Trials entitled "The Trial of Eugene Aram," by Eric R. Watson, barrister-at-law. The volume contains many hitherto unpublished illustrations.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 429, Strand, London, W.C., on June 20th, Dr. F. J. Allan in the chair. The accounts showed that the sickness claims were decreasing with the advent of the warmer weather. The number of claims arising out of accidents due to motor cycles and cars is increasing. Fractured arms from back fires when starting are the most frequent cause of accident. No extra premium is charged to members using motor-cars or motor-cycles. Further information may be obtained from the secretary, Mr. Bertram Sutton, 33, Chancery-lane, London, W.C.

Obituary.

RODERICK MACLAREN, M.D. EDIN., L.R.C.S. EDIN.,

CONSULTING SURGEON TO THE CUMBERLAND INFIRMARY.

THE death occurred on June 24th at Keswick, at the house of his old friend Dr. A. A. H. Knight, of Dr. Roderick Maclaren, one of the oldest and most distinguished practitioners in the north-west of England. The end came rather suddenly, though he had been in failing health for some time. The event was notified to our readers by a letter in our columns last week from his old pupil, Sir John Collie.

Roderick Maclaren, who was born in Dumfries in 1844, was the son of Mr. Roderick Maclaren, of H.M. Customs. He was educated under a private tutor, and entered Edinburgh University in 1860. Among his teachers were Christison, Syme, Goodsir, and Sir James Simpson, and among his fellow-students Sir Dyce Duckworth, Sir Lauder Brunton, Sir James Crichton Browne, Sir William Banks, Sir Thomas Fraser, Sir David Ferrier, and Sir Robert Finlay. After graduating as M.D. in 1865 at the age of 21, Dr. Maclaren became resident house surgeon at Carlisle Dispensary, but his health broke down, and he left England on a sailing ship for Australia. The voyage brought him at least one exciting experience, for a mutiny broke out on board. He returned completely restored to vigour in 1867, and commenced practice in Carlisle. He was appointed surgeon to the dispensary in 1869. He was visiting physician to the fever hospital for four years, and on his retirement he was appointed a member of the committee. During his service as medical officer to the fever hospital a severe epidemic of small-pox had to be dealt with.

In 1874 he resigned from the dispensary on his appointment as surgeon to the Cumberland Infirmary, where he became senior surgeon in 1877 on the resignation of Dr. Page. This important post he filled until 1903. During that long period he did much excellent work, maintaining and enhancing the high reputation enjoyed by the professional staff of the institution. In the administrative work of the hospital also his practical mind, strong common sense, progressive ideas, and business acumen proved of great value to the committee. Many notable innovations and improvements were largely due to his initiative. Other local appointments also engaged his activities. He was consulting surgeon of the Border Counties Home for Incurables and a medical referee under the Workmen's Compensation Act, 1906. He was a Fellow of the Royal Society of Medicine, an original member, later secretary, and in 1879 president, of the Cumberland and Westmorland (now the Border Counties) branch of the British Medical Association. When the British Medical Association met in Carlisle in 1896 he delivered the address on surgery.

From the beginning of his career Dr. Maclaren's bent was towards surgery, and in that branch of his art he specialised. He possessed, however, not only a high degree of manipulative skill, but force of character and self-reliance. He had sound common sense, was systematic and methodical, capable of looking well ahead, and quick to see the practical bearing of a particular course on future events. As assistants in his practice he engaged young men of ability fresh from the hospitals and thoroughly familiar with the latest developments of surgical science, and in this way, as well as by his own practice and study of professional literature, he was able to keep himself in touch with the advancements of science.

Many of his former assistants, it may be observed, have attained high professional positions.

Dr. Maclaren was a loyal and considerate colleague, jealous of the good name and welfare of his profession, and in all matters affecting its polity he took a keen interest. During the recent agitation on the National Insurance Act he strongly supported the attitude of the majority of the profession, but when the permanence of the Act was assured he abstained from further active hostility.

Dr. Maclaren had strong artistic and literary tastes, which found expression in several directions. He was a competent taxidermist, and some of his specimens are now to be seen in the Natural History Museum at Tullie House. He had great skill as a wood-carver and was also an expert carpenter. He invented several appliances which he found very useful in his professional work. He went annually for many years

to Switzerland, where he made the ascent of the Monte Rosa. He was the author of numerous contributions to medical and surgical literature. He enjoyed the confidence and esteem of his professional brethren in a marked degree. The committee of management of the Cumberland Infirmary passed a resolution on June 25th recapitulating his services, and expressing their appreciation and their sympathy with his family.

Dr. Maclaren married Miss Campbell, who, with three sons (the eldest of whom, Mr. Norman Maclaren, is one of the surgeons of the Cumberland Infirmary), survives him. His funeral took place on June 27th, when he was buried in Hayton churchyard in the presence of a large company in which the medical profession was strongly represented.

THE NATIONAL INSURANCE ACT.

LONDON INSURANCE COMMITTEE.

A REPLY by the Insurance Commissioners to the request of the London Insurance Committee that the opinion of the law officers of the Crown be sought as to the proper method of distributing the money accumulated in respect of insured persons who have not chosen a doctor was reported at the meeting of the Committee on June 26th.

The Commissioners stated that it would be contrary to practice to adopt the procedure suggested by the Committee. The Commissioners, so far as the information before them had enabled them to do so, had dealt with the matters submitted by the Insurance Committee[1] after taking legal advice upon those points on which any necessity for legal advice arose. The letter added that the precise arrangements for the administration of medical benefit in London had not been submitted for the Commissioners' approval, as required by Section 15 (2) of the National Insurance Act and Para. 8 of the Medical Benefit Regulations. The Commissioners asked that the Committee would proceed to submit its arrangements accordingly.

The Commissioners enclosed copies of answers in the House of Commons by Mr. Masterman on June 2nd and 9th, stating that the whole of the funds available for medical treatment was to be divided amongst the doctors on the panel in proportion to the number of persons on each list, the number being ascertained after the process of allocation had been completed.

The CHAIRMAN (Mr. J. A. DAWES, M.P.) described the Commissioners' letter as a blank refusal of the Committee's request.

The Committee decided to acknowledge receipt of the letter and to take counsel's opinion itself.

In accordance with the decision of the Committee in favour of the appointment of a medical referee,[2] the General Purposes Subcommittee reported that as there were approximately 1,400,000 insured persons in London, belonging to 862 different societies, it would be totally inadequate to engage the services of one adviser only to deal with questions arising as to malingering or invalidism on the part of insured persons. As an experiment the Committee should engage four part-time medical advisers for a period not exceeding six months. The following should be the conditions of appointment:—

1. That a fee of 7*s.* 6*d.* be allowed for each examination, the fee to include the issue of the necessary certificate.
2. That, subject to the payment to the Committee of 2*s.* 6*d.* by an Approved Society in respect of each examination of an insured person, the services of a medical adviser be placed at the disposal of the Approved Society.
3. That it be the duty of a medical adviser (*a*) to examine and check certificates referred to him by the Insurance Committee; (*b*) to visit, in company with the medical practitioner in attendance, any insured person whose application for sickness benefit was in question; and (*c*) to report on each case to the Insurance Committee.

Medical members of the Committee urged that the wording of Clause 3 (*a*) above tended to convey the impression that the medical adviser would go behind the back of the medical practitioner attending the case, and this clause was referred to the Subcommittee for amendment. The proposal as a whole was then approved.

The medical members of the Sanatorium Benefit Subcommittee were appointed as a deputation to wait upon the Public Health Committee of the London County Council and urge the necessity for further provision for advanced cases of tuberculosis and cases other than pulmonary tuberculosis.

The Committee approved a motion that a return be prepared affording the following information:—

(1) In what cases the doctor on the panel does not reside at the address given for attending insured persons and (*a*) The distance from such an address to his residence. (*b*) Whether there is a resident caretaker at the address referred to. (*c*) Whether there are means of telephonic communication between such address and residence. (*d*) What arrangements are made by doctors in these circumstances for attending insured persons on Sundays, and in cases of sudden illness, out of panel hours in the day and at night.

(2) The names of doctors on the panel who purport to attend at two different addresses during the same hours for the purpose of treating insured persons.

(3) The name of the doctor and the address of his surgery at which it appears from the panel as published that attendance under the Act is not given in the usual course to insured persons on Sundays.

NATIONAL INSURANCE PRACTITIONERS' ASSOCIATION.

The following resolutions were passed at a meeting of the London members of the National Insurance Practitioners' Association, held at Caxton Hall on Friday, June 27th, Dr. LAURISTON SHAW presiding:—

1. That this meeting is of opinion that the money available, during any quarter, for the payment of medical benefit in respect of insured persons who have not been allocated to any practitioner on the panel, should be divided amongst those doctors who were on the panel during the quarter in question, in proportion to the number of insured persons on each practitioner's list and the duration of his service, and that the sum available in London, in respect of the first quarter of the year, should be distributed at the earliest possible date.
2. That this meeting is of opinion that the resolution of the London Insurance Committee proposing that no panel list should exceed 2000 insured persons is *ultra vires*, and that practitioners should resist this proposal so long as they are confident that the conditions of their practice enable them to give efficient service to the persons for whom they have made themselves responsible; and further, that at present any general limitation upon the numbers on doctors' lists is inadvisable as interfering with the insured person's privilege of free choice of doctor.
3. That this meeting of London members of the National Insurance Practitioners' Association is strongly of opinion that the National Insurance Act should be so amended that the power of election to the Local and District Medical Committees should be entirely in the hands of the doctors on the panel for the district.

A copy of the first two resolutions was sent to the London Insurance Committee, and of the third to the Government.

Medical News.

UNIVERSITY OF DURHAM.—At the Convocation held on June 24th the following degrees were conferred:—

Doctor of Medicine—Wilfred Barkes, George Errington Lloyd, George Cuthbert Mura M'Gonigle, and Matilda Ann Sinclair.

Doctor of Medicine for Practitioners of 15 Years' Standing.—James Whitelaw Alexander, Michael Bernard Foster, James Muttyah Handy, Edward Tambyah MacIntyre, Richard Price, and Reginald Carlyon Tweedy.

Bachelor of Medicine (*M.B.*).—Edgar Babst, Robert Ernest Bell, Garfield Carse, Harold Fairclough, Ah Chit Jap, Robert Lacy Kitching, George Eric Warner Lacey, Claude Woodham Morris, Nora Murphy, Carinna Augusta Barry O'Neill, Edward Phillips, John Logan Pringle, Cedric Overton Shackleton, James Stewart Soutter, and Gordon Stewart Woodman.

Bachelor of Surgery (*B.S.*).—Edgar Babst, Garfield Carse, Harold Fairclough, Ah Chit Jap, Robert Lacy Kitching, George Eric Warner Lacey, Claude Woodham Morris, Nora Murphy, Carinna Augusta Barry O'Neill, Edward Phillips, John Logan Pringle, Cedric Overton Shackleton, James Stewart Soutter, and Gordon Stewart Woodman.

Bachelor of Hygiene (*B.Hy.*).—Ernest Edward Norman.

Diploma in Public Health (*D.P.H.*).—Ernest Edward Norman.

Licence in Dental Surgery (*L.D.S.*).—William Hutson.

At examinations held recently the following candidates were successful:—

THIRD EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Materia Medica, Pharmacology and Pharmacy, Public Health, Medical Jurisprudence, Pathology, and Elementary Bacteriology.—Henry Hawes Elliot, Idris David Evans, Mary Sarah Gordon, Ethne Haigh, Edward Ek Dun Lau, Leo Magee, John Eric Measham, John Dover Proud, Frank Blair Robson, Philip Savage, Andrew Smith, and William Stott.

Public Health, Medical Jurisprudence, Pathology, and Elementary Bacteriology.—Hubert Vere Leigh.

SECOND EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Anatomy and Physiology.—Honours, Second Class: George Albert Clark and John Gilmour. Pass-list: Harry Cecil Broadhurst, John Brumwell, Norman Braithwaite, Mary Russell Campbell, Reginald Hunter, John Horsley, James Dixon Johnson, Herbert Arnold Lake, John Kerr Ritchie Landells, Norman Alexander Martin, George Nathaniel Metzger, Thomas Wilson Shaw, William Oxley Forster Sinclair, and Frederick Reginald Sturridge.

[1] THE LANCET, June 14th, 1913, p. 1704.
[2] THE LANCET, May 31st, 1913, p. 1564.

FIRST EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

1. *Elementary Anatomy and Biology, Chemistry and Physics.*—Honours, Second Class: William Duncan and Mordecai Jacob Erdberg. Pass-list: Henry Hamilton Bailey, George Malayramon Kerry, and Sadek Abdel Shehid.
2. *Chemistry and Physics.*—Percy Vernon Anderson, Norman Briggs, James Allan Berry, James Struthers Clark, Ernest Craig Dunlop, Samuel Elijah Goulstine, Charles Gordon Irwin, and Harold Mason Leete.
3. *Elementary Anatomy and Biology.*—John Neville Alexander, Malcolm Cyril Joynt, Peter Murphy, Freda Newman, and Harold Sterne-Howitt.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. A. Czerny, the recently appointed University Professor of Children's Diseases, has also been appointed Professor in the Kaiser Wilhelm's Academy.—*Bordeaux:* Dr. Duvergey has been appointed Professeur Agrégé of General Surgery, and Dr. Chelle Professeur Agrégé of Biological and Medical Chemistry.—*Catania:* Dr. Andrea Tomaselli has been recognised as *privat-docent* of Internal Pathology.—*Freiburg:* Dr. C. T. Noeggerath, of Berlin, has been appointed Extraordinary Professor of Pædiatry.—*Genoa:* Dr. Antonio Calderara has been recognised as *privat-docent* of External Pathology.—*Göttingen:* Dr. O. Klieneberger, of Königsberg, has been recognised as *privat-docent* of Neurology and Psychiatry.—*Gratz:* Dr. R. Possek, *privat-docent* of Ophthalmology, has been granted the title of Extraordinary Professor, and Dr. Heinrich di Gaspero has been recognised as *privat-docent* of Neurology and Psychiatry.—*Lille:* Dr. Gellé has been appointed Professeur Agrégé of Pathological Anatomy.—*Lyons:* Dr. Cotte and Dr. Duroux have been appointed Professeurs Agrégés of General Surgery, and Dr. Savy Professeur Agrégé of Pathological Anatomy.—*Modena:* Dr. Eugenio Centanni, of Sienna, has been appointed to the chair of General Pathology.—*Magdeburg (Sudenburg Municipal Hospital):* Dr. Voigt, of Strasburg, has been appointed Senior Physician to the Children's Department, in succession to Dr. Thiemich.—*Montpellier:* Dr. Etienne has been appointed Professeur Agrégé of General Surgery.—*Munich:* Dr. W. Heuck, of Bonn, has been recognised as *privat-docent* of Dermatology.—*Nancy:* Dr. Fairise has been appointed Professeur Agrégé of Pathological Anatomy.—*Paris:* Dr. Auguste Broca, Professeur Agrégé, has been promoted to the chair of Operations and Appliances, in succession to Dr. Hartmann; Dr. Alglave, Dr. Mocquot, and Dr. Desmarets have been appointed Professeurs Agrégés of General Surgery, and Dr. H. Labbé Professeur Agrégé of Medical and Biological Chemistry.—*Prague (German University):* Dr. Emil Starkenstein has been recognised as *privat-docent* of Pharmacology and Pharmacognosis.—*Strasburg:* Dr. K. Stolte has been recognised as *privat-docent* of Pædiatry.—*Toulouse:* Dr. Piquand has been appointed Professeur Agrégé of General Surgery, and Dr. Florence Professeur Agrégé of Pharmacy.—*Vienna:* Dr. Walter Kolmer has been recognised as *privat-docent* of Histology.

LONDON DERMATOLOGICAL SOCIETY.—The annual meeting of this society was held on June 18th, Dr. W. Knowsley Sibley being in the chair. He gave a brief *résumé* of the work for the past year, and announced that the transactions of the society would be posted to the Fellows in the course of a few days.—The old officers were re-elected, and the following added to the council—namely, Mr. A. T. Bremner (Leicester), Dr. R. Prosser White (Wigan), and Mr. E. G. Reeve (London).—Dr. S. Gooding showed cases of Lupus Erythematosus on the face of a woman, 27 years of age, and of the scalp in a woman, 35 years of age.—Mr. Bremner exhibited photographs of two cases of Scleroderma, the one in a boy, aged nine, which was associated with Leucoderma and Alopecia, and who got quite well again; the other in a woman, aged 60, who had a diffuse symmetrical scleroderma and died. He then showed the case of a man, aged 24, who had on the left frontal region of the scalp a ribbon-like band of scleroderma with complete loss of hair.—Dr. Sibley showed cases of Lichen Planus with considerable pigmentation and patches of lichen hypertrophicus in a man, aged 40; also Lupus Erythematosus in a woman, 28 years of age, with marked lesions on the face, ears, and fingers.—Mr. Reeve read a paper on the Treatment of Diseases of the Skin by Intensive Iodine Administration, and exhibited several cases to illustrate his observations.—After some remarks by the chairman, Dr. David Curle (Glasgow), Dr. White, Dr. M. Bernstein, Mr. D. Vinrace, and Mr. H. C. Samuel joined in the discussion, and Mr. Reeve replied.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The annual general meeting of this society will be held on Friday, July 11th, at the West London Hospital, Hammersmith, at 5 P.M.

PRIZE FOR OPHTHALMOLOGY.—An anonymous donor has given 5000 francs for a prize for researches on iritis and cyclitis. The papers (which may be in English) are to be sent to the editor of the *Annales d'Oculistique*, 26, Boulevard Raspail, Paris, before August 15th, 1914.

CAMBRIDGE RESEARCH HOSPITAL.—The treasurers of the Cambridge Research Hospital have received the sum of £300 from Mr. G. Bidder, of Cambridge, for the purchase of an additional acre of land and a promise of £300 for current expenses from Mr. J. H. Wills, of Chiddingstone Castle, Kent.

MEDICAL GOLF PROWESS.—The eighth annual meeting of the Gloucestershire Golf Union was held at Minchinhampton on June 18th, when Dr. Alfred Brown, of Minchinhampton, won the local championship. The entry was a record one, and Dr. Brown played fine golf in both rounds.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual meeting and launch party of this association will be held on Friday, July 11th, when the saloon launch *Empress of India* will leave Maidenhead Bridge for Henley at 12.15. Tickets, price 12*s.* 6*d.*, may be obtained from the honorary secretary, Dr. Arthur Haydon, 23, Henrietta-street, Cavendish-square, W.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on June 19th, with Sir Francis H. Champneys in the chair. A letter from the medical officer of health for Newport, Monmouthshire, asking the opinion of the Board as to whether a register of cases kept by more than one midwife in common should be so arranged as to distinguish the records of each individual midwife was further considered, and a letter was considered from the matron of the Monmouthshire Training Centre for Midwives on the same subject. The matron of the Monmouthshire Training Centre having expressed her willingness to distinguish the records of each individual midwife, the Board decided that the complaint of the medical officer of health for Newport (Mon.) had been met, and that a copy of her letter be sent to him. A letter was read from the honorary secretary of the Association of Inspectors of Midwives forwarding a copy of a resolution passed at the annual meeting of the association in April, 1913, with reference to the approval of midwives for the purpose of signing the certificates of practical training for candidates for the examination, and with reference to the form of the certificate of attendance on cases. The Board directed that the honorary secretary of the Association of Inspectors of Midwives be informed that the Board's rule is to hold every principal answerable for his or her subordinates. A letter was considered from the town clerk of Stoke-on-Trent urging the amendment of Section 5 of the Midwives Act, 1902, so as to provide for the assessment of contributions from local supervising authorities on some principle more equitable in operation than that arising from apportionment on the basis of the number of midwives giving notice of intention to practise in any given area. The Board directed that the town clerk of Stoke-on-Trent be informed that the Board has recommended the incorporation in the Amending Bill of a clause in accordance with the suggestion now made, and will not fail to support it by all means in its power. A letter was considered from the clerk of the Kent Insurance Committee calling the attention of the Board to a difficulty experienced by midwives in getting medical help in cases of emergency for women entitled to medical benefit. The Board directed that the Kent Insurance Committee be informed that the Board has no power over the assignment of fees under the National Insurance Act, and that the responsibility of advising medical aid is laid upon the midwife by the rules.—At a special meeting of the Board, held on June 26th, the names of four midwives were removed from the roll.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

National Insurance Act (1911) Amendment Bill.

THE text of the National Insurance Act (1911) Amendment Bill is now published. It consists of 13 clauses.

Clause 1 is designed to give statutory authority to the additional grant made at the beginning of the year for medical benefit.

Clause 2 deals with the abolition of reduction of benefits in certain cases. It runs:—

"(1) The rate of sickness benefit shall not be reduced in the case of an insured person who became an employed contributor within one year after the commencement of the principal Act by reason that at the date of so becoming an employed contributor he was of the age of fifty years or upwards, and accordingly subsection (3) of section nine and Table C in Part I. of the Fourth Schedule of the principal Act shall be repealed.

"(2) Part I. of the principal Act shall apply to persons who at the commencement of the principal Act were of the age of sixty-five or upwards and under the age of seventy, and to persons who have since the commencement of the principal Act attained or may hereafter attain the age of sixty-five in like manner as it applies to other persons, and accordingly subsection (4) of section one, paragraph (*a*) of subsection (4) of section four, and section forty-nine of the principal Act shall be repealed.

"Provided that a person who is of the age of sixty-five or upwards at the time of entering into insurance shall not be entitled to medical benefit after he attains the age of seventy unless the number of weekly contributions paid by or in respect of him exceeds fifty.

"(3) This section shall come into operation at such date not later than the fourteenth day of January, nineteen hundred and fourteen, as the Insurance Commissioners may appoint, and the Insurance Commissioners may make such regulations as they may consider necessary for providing, in the case of any such classes as aforesaid, for the transition from the provisions of the principal Act affecting them to the provisions of that Act as amended by this section."

Arrears of contributions are dealt with in Clause 3.

Clause 4 relates to the benefits of exempted persons. It runs:—

"Regulations made by the Insurance Commissioners under sub section (4) of section four of the principal Act shall provide for applying the contributions paid in respect of persons who hold certificates of exemption in providing medical benefit and sanatorium benefit for such persons and the cost of the administration of such benefits, and such persons shall, if they fulfil such conditions as may be imposed by those regulations, become entitled to medical benefit and sanatorium benefit as if they were members of Approved Societies, and the provisions of the principal Act and this Act with respect to the payment and administration of those benefits (*including those relating to the application of moneys provided by Parliament towards the cost of those benefits and the expenses of the administration thereof*) shall, subject to any modifications, adaptations, and exceptions contained in the regulations, apply accordingly."

Medical benefit is dealt with in Clause 5, which reads thus:—

"(1) No voluntary contributor whose total income from all sources exceeds one hundred and sixty pounds a year shall be entitled to receive medical benefit, but in that case the weekly contribution which would otherwise be payable by him shall be reduced by one penny.

"(2) Paragraph (*c*) of subsection (2) of section fifteen of the principal Act shall extend to members of societies other than such Friendly Societies as are mentioned in that paragraph who were at the date of the passing of the principal Act entitled as such members to medical attendance and treatment in like manner and subject to the like conditions as it applies to members of such Friendly Societies."

The other clauses of the Bill deal with the following matters: Clause 6, sickness benefit; Clause 7, special provisions as to casual and intermittent employment; Clause 8, decision of disputes; Clause 9, extension of powers of Commissioners to make regulations; Clause 10, Joint Committee and Insurance Commissioners; Clause 11, offences and legal proceedings; Clause 12, revocation and amendment of Orders and extension of time for making Orders under Section 78 of the principal Act; and Clause 13, short title and construction.

HOUSE OF COMMONS.

WEDNESDAY, JUNE 25TH.

National Insurance and Accidents.

Mr. THOMAS asked the Secretary to the Treasury whether he was aware that a number of doctors were refusing to attend an insured person who was prevented from following his employment through an accident, and was thereby excluded from the benefits of the National Insurance Act; and what steps he proposed to take to deal with this refusal to provide medical aid for insured persons.—Mr. MASTERMAN answered: I am not aware of any such case. If the honourable Member will give me any particulars I will institute immediate inquiries.

Certificates of Panel Practitioners.

Viscount DALRYMPLE asked the Secretary to the Treasury whether the panel doctors had contracted to specify in their certificates the actual nature of the disease of an insured patient, and whether the Approved Societies were entitled to withhold sick benefit if the actual disease was not so specified.—Mr. MASTERMAN wrote in reply: The panel doctors have contracted to furnish, at the request of the insured patient, such certificates as are required to be furnished by that person in connexion with any claim for sickness or disablement benefit made by him in pursuance of the rules of the society of which he is a member. And the Approved Societies are entitled, as trustees of the funds which they disburse, to require from an insured person claiming sickness or disablement benefit under the Act sufficient evidence of his suffering from specific disease or bodily or mental disablement to satisfy them that he is legally entitled to receive the benefits which he claims.

THURSDAY, JUNE 26TH.

Chemists and National Insurance.

Mr. ALDEN asked the Secretary to the Treasury whether he was aware that a number of chemists in certain counties had not yet been paid for the first quarter's working of the National Insurance Act, and that many of these men were unable to give credit for long periods owing to the fact that they themselves had to pay cash to the wholesale druggists: and whether, under the circumstances, he would arrange that these accounts should be paid as speedily as possible.—Mr. MASTERMAN replied: No, sir. The regulations which are incorporated in the agreements entered into by the chemists provide for periodical advances, although a final settlement can only be made at the end of the medical year. Advances have already been made in some cases up to 75 per cent. of the accounts rendered up to the end of last quarter, and I am not aware of any case in which payments have not been made where accounts have been rendered.

Mr. CHARLES BATHURST asked the Secretary to the Treasury whether, in pursuance of the recent Report of the Departmental Committee appointed to consider the conditions imposed by Section 15 (5) (3) of the National Insurance Act, there had been introduced into the amending Bill of the present Session a provision authorising a person, firm, or body corporate who or which has entered into arrangements with an Insurance Committee for the dispensing of medicines for insured persons to employ in such dispensing, not necessarily under the supervision of a registered pharmacist, any person who should have satisfied such conditions as might be prescribed by the Privy Council for that purpose; and, if not, whether he would accept an amendment to that effect.—Mr. MASTERMAN said, in reply: The answer to the first part of the question is in the negative. The Report of the Committee is at present under consideration, and I am not yet in a position to say what action will be taken on it.

Nursing under the National Insurance Act.

Mr. CHARLES BATHURST asked the Secretary to the Treasury whether it was proposed in the National Insurance Act (1911) Amendment Bill to make provision for the inclusion in medical benefit of the nursing of insured persons or otherwise to take steps to provide such persons with efficient nursing and prevent the threatened extinction through lack of financial support of county and district nursing associations.—Mr. MASTERMAN answered: No, sir. Provision is already made under Section 21 of the principal Act whereby Approved Societies and Insurance Committees may subscribe for the support of district nurses for the purposes of visiting and nursing insured persons, but there has not yet been sufficient experience of the working of the Act to show the full effect of this provision or whether amendment is needed.

Infant Mortality.

Mr. ALDEN asked the President of the Local Government Board whether he could state the latest figures as regarded infant mortality in England and Wales; whether he would state the highest and lowest infant mortality rates for towns of over 50,000; and whether he was able to furnish the House with figures showing the effect of recent legislation and administration upon the rate of infant mortality.—Mr. BURNS answered: The infant mortality rate in England and Wales in 1912 was 95 per 1000 births. As regards the second part of the question I will send my honourable friend the figures as regards a certain number of towns. I am afraid that it is not practicable to apportion in any exact manner the effect of recent changes in legislation or administration on the infant mortality rate, but this rate has exhibited a marked tendency to fall during the last eight years. I may add that a report on the subject of infant mortality is now being prepared by the medical officer of the Local Government Board, and I hope shortly to present it.

Islington Tuberculosis Dispensary.

Mr. TOUCHE asked the President of the Local Government Board whether he was aware that the Islington Tuberculosis Dispensary, founded and financed by the doctors of Islington for the purpose of giving treatment to the poor people of the district suffering from tuberculosis, was in danger of being closed owing to lack of funds, while it was stated that, owing to the delay of the Local Government Board in approving a scheme for the establishment of a tuberculosis dispensary by the borough council, there was no probability of the official institution being opened for some time; and could he take any steps to obviate the risk of injury to some 25 patients now under treatment from an interruption of their course of treatment.—Mr. BURNS wrote in reply: I caused this dispensary to be investigated by one of my inspectors, and I did not feel justified in approving it under Section 16 (1) (a) of the National Insurance Act for the treatment of insured persons suffering from tuberculosis. I am anxious to deal with the proposals of the borough council as rapidly as possible.

Rosslare Sanatorium.

In reply to Mr. FETHERSTONHAUGH, who asked a series of questions as to the provisional sanctioning of a sanatorium at Rosslare, county Fermanagh, Mr. BIRRELL (Chief Secretary to the Lord Lieutenant of Ireland) wrote: The Local Government Board have approved of an expenditure of £2000 on Rosslare, and of this £1700 has already been advanced. The Board's medical officer who inspected the site called attention to its elevated and exposed position, but described the soil as drying quickly, and suggested planting to provide shelter. This, I understand, has been carried out. It is true that some of the sleeping shelters were blown down during one of the exceptionally heavy gales of last winter, but they have since been made secure. The suggestion that Rosslare is condemned by the experts who have had personal experience of it is incorrect. The opinions vary, but one at least of the former resident medical officers states that he obtained some

strikingly good results there. No inconvenience has arisen up to the present from the fact that the doctor is non-resident, but it is proposed to appoint a resident medical officer when the buildings now in course of construction are finished.

FRIDAY, JUNE 27TH.

Mental Deficiency and Lunacy (Scotland) Bill.

On the adjourned debate on the Mental Deficiency and Lunacy (Scotland) Bill,

Major HOPE welcomed the measure, believing there was urgent need for such legislation in Scotland both in the general interest of the community and on behalf of those for whom the Bill was primarily intended.

Sir H. CRAIK criticised the policy of making the school boards the responsible authority for the administration of the Bill. He would ask the Secretary for Scotland to consider whether it would not be much better to have *ad hoc* committees for the purpose as was proposed in the English Bill.

Mr. DUNCAN MILLAR thought that there was a general desire in Scotland for some such measure as the Bill, but he hoped further consideration would be given to some of the criticisms which had been directed to its provisions.

Mr. A. F. WHYTE considered that the school boards alone, in conjunction with the parents, were entitled to judge in the initial decision whether feeble-mindedness or not existed in the children.

After the closure had been carried by 180 votes to 75 the Bill was read a second time and referred to the Scottish Standing Committee.

Elementary Education (Defective and Epileptic Children) Bill.

Mr. J. A. PEASE (President of the Board of Education) moved the second reading of the Elementary Education (Defective and Epileptic Children) Bill. He explained that its purpose was to make universal and uniform the Act of 1899, which was only adoptive. The Bill would enable special schools to be created throughout the country with three objects: firstly, to enable all doubtful cases of feeble-mindedness in children to be properly diagnosed; secondly, to determine which of them were educable and which were not; and thirdly, to provide for those who were educable, industrial, manual, and practical training suitable to their varying capacities, and also train them in habits of good conduct and self-control. The Bill proposed to impose this duty on the local education authority. The work of special schools which at present were voluntary was not so effective as it might be if the Bill became law. However, the work now done in them was encouraging, and the fact that over 50 per cent. of the children found employment after leaving school and became almost self-supporting showed that a grand work was already being done in the direction of helping them to become useful citizens in after life. The Board of Education believed that there were 24,000 children in the country who ought to be sent to the special schools, and only half of them were in attendance at the present time. The Board of Education proposed that the existing grant of £4 4*s.* per head in respect of them should be increased to £6, and in the case of those sent to residential schools that it should be £12. The experiment of residential schools had proved encouraging. He recognised that it was important to secure the confidence of the parents in regard to sending their children to these schools.

Mr. GOLDSMITH, in moving the rejection of the Bill, agreed that permissive legislation had not been successful in meeting the problem of the education of the feeble-minded child, and some further provision must be made. But it would be most undesirable if both this Bill and the Mental Deficiency Bill became law, because then there would be two sets of institutions dealing with mental defectives. One of these sets was to be under the Board of Control and the other under the Board of Education. It seemed to him to be most important that these institutions ought to be under one set of local authorities and one central authority.

The honourable Member was addressing the House when the debate was adjourned.

MONDAY, JUNE 30TH.

Panel Practitioners in London.

Sir J. D. REES asked the Secretary to the Treasury whether his attention had been called to the fact that a large number of medical men on London panels were advertised as being available for patients at more places than one at one and the same time, whereas Regulation B (2) (a) of Dec. 5th, 1912, required that the lists of such panel doctors should contain particulars of the days and hours at which they undertake to be in attendance at each place; and, if so, what action he proposed to take to ensure compliance with this condition.—Mr. MASTERMAN answered: I am informed by the London Insurance Committee that with the exception of three misprints, which will be corrected in the revised edition of the list about to be published, the cases referred to in the honourable member's question are cases in which the doctors concerned are either in partnership with other doctors on the panel, or have engaged assistants. In these cases the particulars given include not only the hours at which these doctors can be seen personally, but also the consultation hours of their partners or assistants.

Local Medical Committees in the Metropolis.

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury whether he would say why the Local Medical Committees formed for the boroughs of Poplar and Stepney, who had applied for recognition under Section 62 in April last, had not had any reply to their application; whether the District Insurance Committees were now transacting business without the presence of direct representatives of the medical profession in Poplar and Stepney; and whether, in view of the fact that the District Committees had to draw up schemes for allotment of patients, the Commissioners would ensure that the medical profession should be represented thereon.—Mr. MASTERMAN replied: The question of recognising a Local Medical Committee for the whole county as well as Local Medical Committees for the different metropolitan boroughs is receiving the careful consideration of the Commissioners, but they are at present unable to recognise any Local Medical Committee either for the whole county or for the different boroughs as properly representative of the doctors resident in the respective areas.

The Treatment of Tuberculosis.

In answer to Mr. JOHN WARD, Mr. MASTERMAN said: I am not aware of any Insurance Committees who have failed to make proper provision for the treatment of insured persons suffering from tuberculosis. A return has been laid showing that up to April 30th last over 19,000 had received sanatorium benefit, 10,239 of whom have been treated in sanatoria and other residential institutions.

Experiments on Living Animals.

Mr. LYNCH asked the Secretary of State for the Home Department whether he could state the number of establishments in this country licensed for vivisection purposes or for research work involving experiments on living animals; how many persons were now in possession of licences and certificates authorising them to perform such experiments; how many dogs were employed for this purpose during 1912; what proportion this bore to the total number of animals so employed; and when the annual return of vivisection experiments would be published.—Mr. MCKENNA answered: The number of registered places in Great Britain is 109. The number of persons holding licences is 568. Most of the holders of licences also hold one or more certificates. The total number of experiments performed during 1912 was 83,599. I cannot give the exact number of experiments on dogs, but 888 experiments were performed under the certificates which allow experiments on dogs or cats, but the returns do not show how many there were on either kind of animal. In addition to these some of the 2584 experiments performed under licence only, without certificates, may have been experiments on dogs. The annual return is almost ready for publication, and will, I hope, be issued shortly.

TUESDAY, JULY 1ST.

Sir Victor Horsley and the Home Secretary.

Mr. FRED HALL (Dulwich) asked the Secretary of State for the Home Department whether he would state the result of his communication to the Royal College of Surgeons of England as to the charges made by Sir Victor Horsley with reference to the treatment of Miss Lilian Lenton while in prison; and, if so, whether he would submit the terms of his communication and the reply thereto in order to afford the House an opportunity of drawing its conclusions with regard to the grounds on which he addressed his complaint to the College of Surgeons.—Mr. MCKENNA replied: If the honourable gentleman will move for the correspondence I shall be glad to lay it on the table of the House.

Highlands Medical Service Grant.

Mr. MORTON asked the Secretary to the Treasury whether he can now say when the Bill dealing with the special Highlands and Islands medical service grant (£42,000 per annum) would be introduced; and whether he was aware that the Scottish members were anxious that he should adhere to the promise made when the deputation of Scottish Members waited upon him some weeks back as to the authority to administer the grant.—Mr. MASTERMAN answered: I hope that it will be possible to introduce the Bill at a very early date. The answer to the last part of the question is in the affirmative. The proposals contained in the Bill will be framed on that basis.

Epidemic in St. Kilda.

Replying to Mr. JAMES HOGGE, Mr. MCKINNON WOOD (Secretary for Scotland) said: The medical officer of the Local Government Board for Scotland who went to St. Kilda reports that the epidemic of influenza there is practically over and that before he left the island he satisfied himself that all the patients were convalescent.

WEDNESDAY, JULY 2ND.

Medical Referees and Industrial Diseases.

Mr. STEEL-MAITLAND asked the Secretary of State for the Home Department whether power was given to the medical referee in cases of industrial disease to consult any doctor who had previously had the case under consideration on his own initiative, without any application to that effect necessarily having been made by the parties themselves.—Mr. MCKENNA replied: The Regulations require that the Referee shall, before deciding on the matter referred to him, make a personal examination of the workman, and shall consider any statements made or submitted by either party. There is nothing in the regulations to prevent the Referee, if he should think it necessary, consulting any medical man who has previously had the case before him, but it would be a matter entirely for his own discretion.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B. ET FILS, Paris.

Traité du Sang. Publié sous la Direction de MM. A. Gilbert, Professeur de Clinique Médicale à l'Hôtel-Dieu de Paris, Membre de l'Académie de Médecine, et M. Weinberg, Chef de Laboratoire à l'Institut Pasteur. Secrétaire de la Rédaction: M. le Dr. Boidin. Avec le Collaboration de MM. Achard, Aubertin, Aynaud, Baudouin, Billet, Boidin, Bordet, Breton, Calmette, Chabrol, Chauffard, Dopter, N. Flessinger, Foix, Gengou, Gilbert, Herscher, Jeantet, Jonesco-Michaiesti, De Jong, Jouan, Lebœuf, Léger, Mesnil, Mouton, Nicloux, Nicolle, Noguchi, Nolf, Pappenheim, Parturier, Phillibert, Pinoy, Ribierre, Ch. Richet, Ch. Richet fils, Rubens-Duval, Sabrazès, Sacquépée, Sicard, Tarassévitch, Thoinot, Tiffeneau, Tixier, J. Troisier, M. Villaret, Vincent, Weidenreich, P. E. Weill, Weinberg, Widal. Tome Premier. (Le tome II. paraitra en Octobre.) Prix, en souscription, Fr.42.

CHURCHILL, J. AND A., London.

Therapeutic Clinic of the Paris Faculty of Medicine, Beaujon Hospital, Endowed by the Duc de Loubat. Treatment of Tuberculosis. Ordinary Therapeutics of Medical Men. By Albert Robin, Professor of Clinical Therapeutics at the Paris Faculty of Medicine, Member of the Academy of Medicine. Translated by Dr. Léon Blanc, Physician at Aix-les-Bains; Physician to the Hospital, with the Assistance of H. de Méric, Surgeon to the French Hospital, London. Price 18*s.* net.

Surgical Pathology and Morbid Anatomy. By Sir Anthony A. Bowlby, C.M.G., F.R.C.S., Surgeon in Ordinary to His Majesty the King and to St. Bartholomew's Hospital. Sixth edition. Edited with the assistance of Dr. F. W. Andrewes, Lecturer on Pathology at St. Bartholomew's Hospital, Professor of Pathology in the University of London. Price 10*s.* 6*d.* net.

Treatise on General and Industrial Organic Chemistry. By Dr.

Ettore Molinari, Professor of Industrial Chemistry to the Society for the Encouragement of Arts and Manufactures and of Merceology at the Luigi Bocconi Commercial University, Milan. Translated from the Second Enlarged and revised Italian Edition by Thomas H. Pope, B.Sc., A.C.G.I., F.I.C., School of Malting and Brewing, University of Birmingham. Price 24s. net.

CONVALESCENT HOMES ASSOCIATION, 14, Victoria-street, London, S.W.

Convalescent Homes Association. List of Convalescent Homes and Sanatoria Receiving London Patients. (With Full Particulars of the Terms of Admission, &c.). Second (revised) Edition. Price 1s.

DEUTICKE, FRANZ, Leipzig und Wien.

Nierenphysiologie und funktionelle Nierendiagnostik im Dienste der Nierenchirurgie und der Internen Klinik. Von Dr. Victor Blum, Privatdozenten für Urologie an der K. K. Univerität Wien. Price M.4.

ENKE, FERDINAND, Stuttgart. F. BAUERMEISTER, 19, West Regent-street, Glasgow.

Geschichte der Ohrenheilkunde. Von Dr. Adam Politzer, Em o.ö. Professor der Ohrenheilkunde an der Wiener Universität. Zwei Bände. II. Band. Von 1850–1911. Unter Mitwirkung bewährter Fachkräfte. Price M.24, or 24s.

FISCHER, GUSTAV, Jena.

Jenaer medizin-historische Beiträge. Herausgegeben von Prof. Dr. Theod. Meyer-Steineg. Heft 4. Die hygienischen Anschauungen des römischen Architekten Vitruvius. Ein Beitrag zur antiken Hygiene. Von Dr. med. Albert Söllner. Price M.2.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BENNETT, E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Lydbrook District of the county of Gloucester.

FAWCITT, R., M.B., Ch.B. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Broughton-in-Furness District of the county of Lancaster.

GRIFFITHS, PHILIP RHYS, M.B., B.S. Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, for the County Court Circuit, No. 24, to be attached more particularly to the Cardiff and Barry County Courts.

KING, W. G., Colonel, I.M.S., has been appointed Lecturer in Applied Hygiene of the Tropics to King's College.

LLOYD, BERTRAM A., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Out-patients at the Queen's Hospital, Birmingham.

MCCLELLAND, R. S., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Pontyberem District of the county of Carmarthen.

METCALFE, JAMES, M.D. Brux., L.R.C.P. & S. Edin., has been appointed Honorary Physician in Charge of the X Ray and Electrical Department of the Prince of Wales's General Hospital, Tottenham, N.

MONRO, THOMAS KIRKPATRICK, M.D., C.M. Glasg., has been appointed Professor of Practice of Medicine in the University of Glasgow.

MOWAT, HAROLD, M.D. Edin., has been appointed Physician in Charge of the X Ray and Electrical Department at the Metropolitan Hospital.

O'BRIEN, W., M.B., Ch.B. N.U.I., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Aughrim District of the county of Wicklow.

SINCLAIR, J., M.D. Durh., M.R.C.P. Lond., M.R.C.S. Eng., has been appointed Chief Medical Officer to the Post Office.

STEELE, RUSSELL VYVYAN, M.B., B.S. Durh., has been appointed House Physician at the West London Hospital.

VESSELOVSKY, VICTOR, M.R.C.S., L.R.C.P. Lond., has been appointed Resident Assistant Anæsthetist to St. Mary's Hospital.

WILLIAMS, D. R., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Penmachno District of the county of Carnarvon.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer and Junior Resident Medical Officer for six months. Salaries at rate of £60 and £40 per annum respectively, with board, residence, &c.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £90 per annum, with board and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £75 per annum, with board, rooms, &c.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £220 per annum, with rooms, fire, light, and attendance.

BIRMINGHAM, RUBERY HILL ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with apartments, board, laundry, &c.

BIRMINGHAM UNION, DUDLEY-ROAD INFIRMARY.—Second Assistant Medical Officer. Salary £160 per annum. Also Third Assistant Medical Officer. Salary £150 per annum. Each with apartments, first-class rations, laundry, and attendance.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £90 per annum, with apartments, board, and attendance.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon for six months, unmarried. Salary £80 per annum, with board, lodging, and washing.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRISTOL, CITY AND COUNTY OF.—Tuberculosis Medical Officer. Salary £400 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Officer. Salary £80 per annum, with board, residence, and attendance.

BRISTOL ROYAL INFIRMARY.—Obstetric and Ophthalmic House Surgeon for six months. Salary £75 per annum, with apartments, board, and laundry.

BURNLEY, COUNTY BOROUGH OF.—Assistant to Medical Officer of Health. Salary £250 per annum.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and laundry.

CAMBERWELL, CONSTANCE-ROAD WORKHOUSE, East Dulwich, S.E.—Locum Tenens for four weeks. Salary at rate of 6 guineas weekly, with board, lodging, and washing.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Surgeon and Second House Surgeon, each for six months. Salary £80 each per annum, with board, residence, and laundry.

CANCER HOSPITAL, Fulham-road, London, S.W.—Senior and Junior House Surgeons, each for six months. Salaries £80 and £70 per annum respectively.

CANTERBURY, KENT COUNTY ASYLUM, Chartham.—Junior Assistant Medical Officer, unmarried. Salary £220 per annum, with apartments, attendance, laundry, &c.

CANTERBURY MENTAL HOSPITAL, Canterbury.—Assistant Medical Officer, unmarried. Salary £160 per annum, with board, lodging, washing, and attendance.

CARDIFF, KING EDWARD VII.'S HOSPITAL.—House Surgeon for six months. Salary £30, with board, residence, and laundry.

CHARING CROSS HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board and residence.

CHELTENHAM GENERAL HOSPITAL.—House Physician, unmarried. Salary £100 per annum, with board, lodging, and washing.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £90 per annum, with board, apartments, and laundry.

CLIFTON, YORK, NORTH RIDING ASYLUM.—Male or Female Second Assistant Medical Officer. Salary £200 per annum, with board, apartments, washing, and attendance.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—House Physician and Junior House Surgeon. Salary £90 per annum each, with residence, board, and laundry.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—First Assistant Medical Officer and Second Assistant Medical Officer. Salary £275 and £175 per annum respectively, with apartments, board, attendance, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried. Salary at rate of £75 per annum, with board and laundry.

DEWSBURY AND DISTRICT GENERAL INFIRMARY.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

DOWN DISTRICT LUNATIC ASYLUM, Downpatrick.—Junior Male Assistant Medical Officer, unmarried. Salary £130 per annum, with apartments, board, washing, attendance, &c.

DUBLIN, PEAMOUNT SANATORIUM, Hazelhatch.—Resident Medical Superintendent. Salary £400 per annum, house and light included.

DUBLIN, ROYAL COLLEGE OF SURGEONS IN IRELAND.—Professor of Anatomy.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

DURHAM COUNTY ASYLUM.—Third and Fourth Assistant Medical Officers, unmarried. Salary £180 each, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Resident Medical Officer. Salary £100 per annum, with board, residence, and laundry.

EAST SUFFOLK, ADMINISTRATIVE COUNTY OF.—Two Assistants to County Medical Officer of Health. Salary £300 per annum.

EAST SUSSEX COUNTY COUNCIL, EDUCATION COMMITTEE.—Senior Assistant and Deputy School Medical Officer, and Junior Assistant School Medical Officer. Salaries: Senior Assistant and Deputy School Medical Officer £300 per annum; and Junior Assistant School Medical Officer £250 per annum.

EDINBURGH, CORPORATION OF.—Assistant Medical Officer of Health as Tuberculosis Officer. Salary at rate of £500 per annum.

ESSEX EDUCATION COMMITEE.—School Medical Inspector. Salary £250 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Surgeon for four months. Salary at rate of £75 per annum, with board, residence, and washing.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of 100 guineas per annum, with board, apartments, and washing.

GLASGOW ROYAL ASYLUM.—Senior Assistant Physician, unmarried. Salary £250 per annum, with board, apartments, and laundry.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing. Also Physician on the Acting Medical Staff.

GREENOCK INFIRMARY.—Two House Surgeons.—Salary £60 per annum each, with board and residence.

HALIFAX ROYAL INFIRMARY.—Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing.

HARRIS, PARISH OF.—Medical Officer and Public Vaccinator. Salary £120 per annum.

HASTINGS, EAST SUSSEX HOSPITAL.—Senior House Surgeon. Salary £100 per annum, with residence, board, and washing.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer, unmarried. Salary £155 per annum, all found except stimulant.

HITCHIN, THREE COUNTIES ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

IPSWICH, EAST SUFFOLK AND IPSWICH HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

JOHANNESBURG, JOHANNESBURG HOSPITAL, South Africa.—Non-resident X-Ray Medical Officer. Salary £750 per annum.

KING'S COLLEGE HOSPITAL.—Sambrooke Medical Registrar. Also Assistant Radiographer.

LANCASTER COUNTY ASYLUM.—Locum Tenens Assistant Medical Officer. Salary £5 5s. per week, with board, lodging, and attendance.

LEEDS GENERAL INFIRMARY.—Resident Medical Officer at Ida and Robert Arthington Hospitals. Salary £60 per annum. Ophthalmic House Surgeon. Salary £50 per annum. Also Two House Physicians without salary, but all with board, residence, and laundry.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and residence.

LEICESTER, LEICESTERSHIRE AND RUTLAND LUNATIC ASYLUM, Narborough, near Leicester.—Junior Assistant Medical Officer, unmarried. Salary £200 per annum, with apartments, board, and washing.

LINCOLN MENTAL HOSPITAL, The Lawn, Lincoln.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, &c.

LONDON HOSPITAL, Whitechapel-road, E.—First Assistant to Dr. James Mackenzie in the Cardiac Department for six months. Salary at rate of £300 per annum. Also Assistant Physician.

LONDON LOCK HOSPITAL.—FEMALE HOSPITAL: House Surgeon and Assistant House Surgeon. Salary £100 and £80 per annum respectively, with board, lodging, and washing.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried. Salary at rate of £100 per annum, with board, residence, and laundry.

MAIDSTONE, KENT COUNTY ASYLUM.—Fourth Assistant Medical Officer, unmarried. Salary £200 per annum, with quarters, attendance, washing, &c.

MANCHESTER MEDICAL MISSION.—Part or Whole-time Medical Officer.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Surgeon and Assistant House Surgeon for six months Salary at rate of £60 and £40 respectively, and each with board and washing.

NEWARK-UPON-TRENT HOSPITAL AND DISPENSARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, lodging, and laundry.

NORTHAMPTON, ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES.—Third Assistant Medical Officer. Salary £200 per annum, with apartments, board, and washing.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Surgeon and Casualty House Surgeon for six months. Salary £60 per annum, with board, lodging, and washing.

PETERBOROUGH INFIRMARY.—House Surgeon, unmarried. Salary at rate of £120 per annum, with residence, board, and laundry.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

PORTSMOUTH ROYAL HOSPITAL.—House Physician for six months. Salary £80 per annum, with board, &c.

PRESTON COUNTY ASYLUM, Whittingham, Lancs.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, London.—House Physician for six months. Salary at rate of £80 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £100 per annum, with board, lodging, and washing.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Physiology. Also Examiner in Dental Surgery.

ROYAL DENTAL HOSPITAL OF LONDON, Leicester-square, W.C.—Anæsthetist. Salary £50 per annum.

ROYAL EYE HOSPITAL, Southwark, S.E.—Junior House Surgeon for six months. Salary £50 per annum, with board and residence. Also Clinical Assistants.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Ophthalmic Surgeon.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—House Physician for six months. Salary at rate of £60 per annum, with board, lodging, and washing

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.

ST. GILES AND BLOOMSBURY INFIRMARY, PARISHES OF, Cleveland-street, Fitzroy-square, W.—Medical Superintendent. Salary £300 per annum, with residence, light, fuel, washing, and attendance. Also Assistant Medical Officer. Salary £150 per annum, with board, lodging, washing, and attendance.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

SALISBURY GENERAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum. Also Assistant House Surgeon, unmarried. Salary £50 per annum. Each with apartments, board, and lodging.

SHEFFIELD, EAST END BRANCH OF THE CHILDREN'S HOSPITAL (OUT-PATIENT DEPARTMENT).—House Surgeon. Salary £75 per annum, with board and lodging.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £30 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Two Resident Medical Officers. Salary £70 per annum, with board and residence.

SOUTH AFRICA, LUNATIC AND LEPER ASYLUM SERVICE.—Three Junior Medical Officers. Salary £280 per annum, with board and lodging.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

SOUTH SHIELDS UNION WORKHOUSE INFIRMARY AND COTTAGE HOMES.—Medical Officer. Salary £300 per annum, with rations, apartments, and attendance. Also Female Assistant Medical Officer. Salary £130 per annum, with rations, attendance, and apartments.

SOUTHWARK UNION INFIRMARY, East Dulwich Grove, S.E.—Assistant Medical Superintendent. Salary at rate of £150 per annum, with board, lodging, and washing.

STAFFORDSHIRE EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary £250 per annum.

STIRLING DISTRICT ASYLUM, Larbert.—Junior Assistant Medical Officer. Salary £150 per annum, with board, lodging, and laundry.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY, Hartshill.—House Surgeon. Salary £100 per annum, with apartments, board, and washing.

SUNDERLAND ROYAL INFIRMARY.—House Physician and Two Junior House Surgeons. Salaries £80 per annum, with board, residence, and laundry.

SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £75 per annum, with board, washing, and attendance.

TRURO, ROYAL CORNWALL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with rooms, board, and washing.

UNIVERSITY OF LONDON, KING'S COLLEGE.—Demonstrator in Department of Anatomy. Salary £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician and House Surgeon for six months. Salary £40, with board, lodging, and laundry.

VIRGINIA WATER, SURREY, HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE.—Junior Assistant Medical Officer. Salary £200 per annum, with board, lodging, laundry, and attendance.

WALTHAMSTOW URBAN DISTRICT HOSPITAL FOR INFECTIOUS DISEASE, Chingford.—Resident Medical Officer. Salary £150 per annum, with rooms and board.

WARRINGTON, LANCASHIRE COUNTY ASYLUM, Winwick.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and washing.

WARWICK ASYLUM.—Assistant Medical Officer, unmarried. Salary £175 per annum, with board, residence, and laundry.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anæsthetist, unmarried. Salary £75 per annum, with board, residence, and washing.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Resident House Physician for six months. Salary at rate of £120 per annum.

WEST HAM UNION INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Third Assistant and Fourth Assistant Resident Medical Officer. Salaries £130 and £120 per annum respectively, with usual residential allowances.

WHITECHAPEL UNION INFIRMARY, Vallance-road, E.—Second Assistant Resident Medical Officer. Salary £120 per annum, with rations, apartments, and washing.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board and lodging.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, rooms, and laundry. Also Resident Medical Officer. Salary at rate of £100 per annum, with board, rooms, and laundry.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and washing.

YORK DISPENSARY AND MATERNITY HOSPITAL.—Resident Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Colwyn Bay, in the county of Carnarvon; and at Axminster, in the county of Devon.

Births, Marriages, and Deaths.

BIRTHS.

BUTLER.—On June 24th, at Goldhawk-road, London, W., the wife of J. A. Butler, M.D., of a daughter.

DERHAM-REID.—On June 29th, at Auchinellan, St. Helen's-road, Bolton-le-Moors, the wife of James Derham-Reid, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

GRISEWOOD.—On June 24th, at Egremont, Cheshire, to Captain and Mrs. A. E. Grisewood, I.M.S., a son.

WOODWARD.—On June 28th, at Kingston Bagpuize, Abingdon, to Dr. and Mrs. Woodward, a son.

MARRIAGES.

LINTON—ASQUITH.—On June 24th, at St. James's, Piccadilly, Stanley Fox Linton, M.B., B.Sc., of Scarborough, to Mary Pemberton Asquith, younger daughter of the late T. W. Asquith, of Harperley Hall, County Durham.

DEATHS.

CROSS.—On June 30th, at Calstock, Moss-lane, Pinner, John Cross, M.D. Cantab., formerly of Regent's Park, London.

MACLAREN.—On June 17th, at Keswick, Roderick Maclaren, M.D., of Carlisle, in his 69th year.

WILLETT.—On June 30th, at Wyndham Croft, Turners Hill, Sussex, Alfred Willett, F.R.C.S., Consulting Surgeon to St. Bartholomew's Hospital, aged 76 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

CHOLERA AND PLAGUE NOTES.

In the Philippine Islands no case of cholera has been reported since 1911, but during June, 1912, two cases of plague were reported in Manila, these being the first cases in the Philippines, in human beings, for a period of over six years, and in rats for a period of five years. Immediately sanitary steps were taken and active rat-catching measures begun, and by the end of the year, although 49 cases and 42 deaths had occurred meanwhile, the prevention of any spread of the disease seemed assured, as all the cases occurred within a radius of ten blocks of houses in one district of Manila, and no new cases appeared at the end of the year. In July a case appeared in Iloilo, and preventive measures were at once taken with similar success to that achieved in Manila, while careful outgoing quarantine measures were carried out at both places with the view of preventing the spread of the disease to other places in the islands. It is supposed that the infection was imported direct from China or Japan.

In the consular district of Shimonoseki, Japan, an epidemic of cholera (imported from Shanghai) began in August, 1912, and lasted until November. 1083 cases were reported and 696 deaths. The total population of the district is about 5,500,000, which includes only some 55 British subjects.

Mr. P. Stevens, British Consul at Batoum, writes:—

> This district was less overrun by serious sickness during 1912 than in previous years, and the cholera experienced for several consecutive years up to 1911 was absent. Plague, however, again appeared in the eastern steppes of the government of Astrakhan, and the disease was also noticeable on the confines of the province of Kuban and the borders of the government of Stavropol. In the first-named locality the mortality from plague is reported to have been considerable, and the whole district stricken had to be completely isolated in order to prevent the disease from spreading. In the second two localities only a few isolated cases occurred. As plague also appeared in Central Asia in 1912, the Russian Government has adopted measures of precaution for fear of an outbreak in the Caucasus in 1913. Accordingly, 42 plague stations have been opened in the government of Elizabetpol, 7 in the government of Erivan, 20 in the province of Kars, and 1 in the district of Zakatal.

THE UNIVERSITY OF HONG-KONG.

THE University of Hong-Kong, which was referred to in our correspondent's Notes from China in THE LANCET of Sept. 17th, 1910, came into existence on March 30th, 1911, and its prospectus for the academic year 1913–14 is before us and forms very interesting reading. From the very opening of the registers all the available residence accommodation was taken up—not only that in the hostel provided by the University itself, but also those established by the various missions, the regulations of which are essentially the same, and, in point of fact, one of them was compelled to extend. The site comprises an area of 709,789 square feet, elevated 200 feet above the sea, and overlooking the city of Victoria, and accommodates the main building, quarters for the staff, the University hostel, and the anatomical school. The main building contains the great hall (80 by 50 feet), 11 class-rooms, eight laboratories and workshops, libraries, common room for students, offices, servants' quarters, &c. Its educational standard is that of the University of London, and external examiners of standing will conduct the final degree examinations. The period of study is four years of three terms each in arts and engineering and five years in medicine. His Majesty the King is the patron of the University, and His Excellency Sir Francis Henry May, K.C.M.G., the Chancellor. The Dean of the Faculty of Medicine is Dr. Francis Clark. All candidates for a medical (as for other) degree must matriculate in the University, or be exempt therefrom in virtue of having passed certain recognised equivalent examinations. The subjects of the matriculation examination are English, Latin, or classical Chinese, or other classical Oriental language, mathematics, and one of the following: Greek, French, German, a modern Chinese dialect, or other modern language. At the opening of the University last year the teaching staff of the Hong-Kong College of Medicine became lecturers in the Faculty of Medicine of the University. They are: Anatomy, Dr. G. H. L. Williams and Dr. C. M. Heanley; Physiology and Biology, Captain D. Arthur, I.M.S.; Chemistry, Mr. A. C. Franklin; Physics, Mr. T. H. Matthewman; Pathology and Bacteriology, Mr. H. Macfarlan; Medical Jurisprudence, Dr. Francis Clark; Public Health, Dr. W. W. Pearse; Materia Medica and Therapeutics, Dr. O. Marriott; Midwifery and Gynæcology, Dr. C. Forsyth; Medicine, Dr. G. P. Jordan, Dr. F. T. Keyt, and Dr. C. W. McKenny; Surgery, Dr. W. V. M. Koch and Dr. R. Maclean Gibson. The two professorships of anatomy and of physiology and biology have not yet been filled. There are well-equipped laboratories for the study of the preliminary and ancillary sciences, while clinical teaching is supplied by the Tung Wah Hospital (250 beds) and the Nethersole and affiliated hospitals (100 beds). The sanitary department of the colony affords excellent material for the study of preventive medicine. For the degrees of M.B., B.S., which must be taken conjointly, there are four examinations. The degree of Doctor of Medicine will not be conferred until five years after the M.B., B.S., and involves an examination in medicine and one of the following subjects: public health, medical jurisprudence, pathology, bacteriology, midwifery, tropical medicine. The Faculty of Medicine has several scholarships varying in value from $70 to $150 a year. In every second and third year one of the King Edward VII. scholarships of £40 will be awarded in the Faculty of Medicine. The University fees are $300 tuition fees, and $240 board and lodging annually. These with books, laboratory, and other expenses bring the yearly cost up to about $850. The enthusiastic interest of the Chinese, both statesmen and private persons, and not only of those who are resident in the British colony of Hong-Kong, but in Chinese communities generally, is of good augury, and the new University bids fair to perform an important service not only to the spread of learning, but also to the strengthening of the comity of nations and "the development and formation of character of students of all races, nationalities, and creeds."

THE PLAGUE IN PERSIA.

In the annual report of the British Vice-Consul, Mr. H. G. Chick, it is stated that the business life of Bushire received a severe set-back early in 1912 from a reappearance of the epidemic of plague. Quarantine restrictions are strict, and plague was unknown at Bushire before 1910, when a short epidemic resulted in 46 deaths, but attracted little notice. In the spring of 1911 a severer outbreak, lasting to June, carried off 98 persons and seriously alarmed the population, many of whom left the district. When, therefore, plague reappeared early in February, 1912, and speedily assumed severe proportions, a general exodus of inhabitants followed. The quarantine authorities endeavoured to combat the epidemic and relieve anxiety by urging the people to present themselves for inoculation, and up to a certain point were successful, over 4000 inoculations being made, amongst whom very few fatal cases occurred. The epidemic lasted till the middle of June, the number of cases reported being 965 and the number of deaths 729, or 75 per cent. The highest mortality in one week was 122. In Bushire, a town of 20,000 inhabitants and the total population of the island about 25,000, such a heavy sickness and mortality naturally brought nearly all business to a standstill. During March, April, and May it is calculated that over 8000 people left the town and either went into the interior or to villages along the coast or to Basra, Baghdad, and the Shiah holy places. From April to May the bazaars, except for provisions, remained almost entirely closed and no business could be done by importers. Many of those who fled have not returned and the whole population was, at the time the Vice-Consul wrote his report, awaiting anxiously to see whether the epidemic would return in 1913. Should it do so a general exodus is expected. (As stated in THE LANCET of June 14th (p. 1697), during April and up to May 10th 25 cases and 22 deaths were recorded.) Plague also penetrated inland to villages about 30 miles distant.

A PHARMACIST'S SUCCESSFUL ACTION FOR LIBEL.

Mr. W. A. Gibson, carrying on business at Brighton, where he is governing director of the firm of W. A. Gibson, Limited, druggists, brought an action for libel against the *Daily Express*, the settlement of which was recently announced in court before Mr. Justice Bailhache. The plaintiff based his claim upon a paragraph in the defendant newspaper in January of this year at the time when the death of young Mr. Trevanion at Hove from veronal poisoning was attracting great attention, and when the question of the possibility of the overdose being taken accidentally was of interest, as well as that of the ease with which veronal might be obtained. The paragraph stated that Mr. Trevanion obtained veronal in cachets from London, and also from the plaintiff's firm, and proceeded: "He (Trevanion) would sometimes buy large quantities," Mr. Gibson said; "but there is nothing in that, for it was put up in cachet form, which makes it easy to determine the exact dose. Veronal is regarded as an eminently safe drug for those who suffer from insomnia, and it would require an enormous dose to have harmful effects." As a matter of fact, Mr. Gibson not only had not made the foolish and mischievous observations thus ascribed to him, but had had no conversation upon the subject of Mr. Trevanion's habits with any representative of the *Daily Express*, and the opinions imputed to him were so far from being his that as a member of the Pharmaceutical Society he had himself taken part in getting veronal scheduled as a poison. Naturally the paragraph quoted occasioned him much personal annoyance, in addition to which it laid him open to receive from strangers, medical men and laymen, letters upbraiding him for the statements which on the authority of the defendant paper he was supposed to have made. In the circumstances the *Daily Express* took the correct course of withdrawing with apologies the matter complained of, and at the same time paid the plaintiff an agreed sum by way of

compensation, with the cost of the legal proceedings taken by him in defence of his reputation. In comment it may be pointed out that a great deal is often published in connexion with sensational incidents of the kind referred to above which ought not to appear at a time when it is quite uncertain what course the law may take. It is unfair to any man, either with or without his knowledge and consent, to saddle him with statements of any kind upon matters as to which he may be called on to give evidence, and any man invited to say anything to the representative of any newspaper will, if he is sensible, refuse politely but absolutely to open his lips. Mr. Gibson is to be congratulated both upon not having said what was ascribed to him and not having been interviewed.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—My attention has been drawn to a page in the weekly edition of the *Yorkshire Post*, where, in describing a tennis tournament at St. Anne's-on-Sea, my name is prominently mentioned and pointed reference made to my work.

I desire to disclaim all responsibility for this. My name appears without my consent, either actual or by implication, and entirely without my knowledge. I am, Sir, yours faithfully,

St. Anne's-on-Sea, June 30th, 1913. H. MERRALL, M.B. Vict.

ST. HELENA HEALTH REPORT.

ACCORDING to the St. Helena Blue-book for the year 1912, just received at the Colonial Office, the estimated civil population on Dec. 31st amounted to 3519. To this must be added the Royal Marine detachment and crews of shipping in the port, bringing up the total to 3772. The birth-rate for the year in the civil population worked out at 28·4 per 1000, and the death-rate at 12·5 per 1000 (as against 10·9 in 1911). Of the 44 deaths 20 were those of persons over the age of 70, one of whom had reached the age of 98. The general health of the island during the year was good. The increased death-rate was mainly due to deaths from old age. On the other hand, the infant mortality rate was only 9·61 per 1000, calculated on the number of registered births—a marked decrease on the previous year. There were no deaths from zymotic disease. An outbreak of scarlet fever occurred in the latter part of the year. The disease first appeared in August, and, owing to the prompt and stringent measures taken to prevent dissemination, was for a long time confined to Jamestown. All cases were isolated in the military hospital, which was specially set apart for the purpose, and all infected material and buildings were thoroughly disinfected. Latterly, however, one or two cases appeared in the western country districts. Up to the end of the year the total number of cases amounted to 31. Most of these were of a mild type, and no deaths occurred. It has been impossible to trace the origin of the outbreak, the last instance having occurred in 1903.

There were 167 admissions to the hospital during the year, as against 157 in 1911. There were 9 deaths—a percentage of 5·3—as compared with 4 deaths and a percentage of 2·5 in 1911. There has been no change in the nursing staff, and Miss Hart has continued to show her usual zeal and devotion to her duties as lady superintendent—a position of exceptional difficulty and responsibility in this colony.

The mean temperature during the year was 61·60° F. at the meteorological station, Hutt's Gate, and 72·4° at Jamestown. The total rainfall was 44·340 inches at Hutt's Gate (an increase of 12·59 inches over 1911, which was an exceptionally dry year) and only 9·21 inches at Jamestown.

THE TREATMENT OF OBESITY.

IN reply to a medical correspondent from India we have nothing to add to the suggestions usually made in text-books of treatment. The general principles are to diminish the intake of fats and carbohydrates, to restrict the amount of fluid taken, and to promote loss by careful exercise. In regard to drugs, the chief ones employed are aperients and thyroid extract, but the latter requires care, and in general it may be said that dietetic treatment is the safest and most reliable.

WANTED—A HOME.

A MEDICAL correspondent, who is no longer in active practice, would be much obliged if any reader of THE LANCET could tell him of a home suitable for a retired bank clerk, aged 65, with fatty degeneration of the heart. The patient and his wife are dependent on a pension of £140 per annum, out of which they are prepared to contribute a small sum towards his maintenance.

STRATHPEFFER SPA.

WE have received a copy of a small book which describes the medical applications of the waters of Strathpeffer, as well as certain accessory methods of treatment which have been adopted at this well-situated health resort. The four articles comprising the book are contributed by local physicians. As one of the writers, Dr. W. Bruce, observes, a great responsibility lies with the practitioner who recommends his patients to have recourse to a particular spa, but he is obviously helped by an honest statement of the therapeutic claims of any individual watering-place made by those who are entitled to give such an opinion. This, we believe, correctly explains the motive of the book. The natural beauties of the place are well reproduced from an excellent series of photographs.

A DISASTROUS FIRE.

THE valuable research work periodically made public by the *Bulletin of the Manila Medical Society* renders the destruction of all manuscript, plates, and other property by an extensive fire, which occurred in April, a scientific calamity, inasmuch as it has rendered it necessary to suspend indefinitely the publication of the *Bulletin*. Our Philippine *confrères* have our deep sympathy in the disaster that has befallen their work.

Reaction.—Either of the two following books will, we think, answer the purpose of our correspondent: "Syphilis from the Modern Standpoint," by McIntosh and Fildes (Arnold); and "Recent Methods in the Diagnosis and Treatment of Syphilis," by Browning and Mackenzie (Constable).

Mr. R. F. Cooper.—Our correspondent might find useful information in "Linn's Health Resorts of Europe," and in the section on spas and climatic health resorts in Churchill's Medical Directory; but the patient should not make a final choice without medical guidance.

Mr. J. F. Robinson.—Thyroid extract is not prescribed indiscriminately for arrested development in human beings, and it would be unscientific to administer it to animals except under skilled veterinary direction.

Rectum.—The symptoms point to the prostate gland. Our correspondent is advised to consult a surgical colleague.

Inquirer.—It is quite proper for the medical man to claim payment from the company for filling up the inquiry form.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. E. G. Little: Clinique (Skin). 5.15 P.M., Lecture:—Mr. J. D. Mortimer: Preparation for Anæsthesia.

TUESDAY.—4 P.M., Dr. P. Parkinson: Clinique (Medical). 5.15 P.M., Lecture:—Mr. L. G. Austin: Carcinoma of the Rectum.

WEDNESDAY.—4 P.M., Mr. G. Taylor: Clinique (Surgical). 5.15 P.M. Lecture:—Dr. W. H. Willcox: The Treatment of Anæmia.

THURSDAY.—4 P.M., Mr. J. Cunning: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. R. H. A. Whitelocke: Loose Bodies in the Knee.

FRIDAY.—4 P.M., Dr. G. W. Thompson: Clinique (Eye).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.15 P.M., Sir Malcolm Morris: Skin.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. Dr. A. Davies: Pathological Demonstration. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. Cole: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. C. Rowntree: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——10 A.M., Radiography.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour; Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Diseases of the Spinal Cord.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. G. Stewart: Diseases of the Spinal Cord.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. G. Stewart: Diseases of the Spinal Cord.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Armour: Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Dr. G. Stewart: Diseases of the Spinal Cord.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin. 5 P.M., Lecture:—Dr. G. Stewart: Diseases of the Spinal Cord.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Lecture:—Dr. Jex-Blake: Obstruction of a Main Bronchus.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY AND FRIDAY.—3.30 P.M., Clinical Lectures:—Dr. H. Howell: Neuritis.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M., Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

MONDAY.—5 P.M., General Meeting.

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MONDAY.—10 A.M., Obstetrical Lecture: The Management of Abnormal Presentations. 11 A.M., Examination of Patients and Minor Operations.

TUESDAY.—10 A.M., Major Operations. 4 P.M., Class in Gynæcological Diagnosis.

WEDNESDAY.—10 A.M., Obstetrical Lecture: The Management of Abnormal Presentations (continued). 11 A.M., Examination of Patients and Minor Operations.

THURSDAY.—10 A.M., Major Operations.

FRIDAY.—10 A.M., Gynæcological Lecture: Uterine Displacements (continued). 11 A.M., Examination of Patients and Minor Operations. 4 P.M., Class in Gynæcological Diagnosis.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 2nd, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
June 26	30·22	N.W.	0·06	113	69	55	53	61	Fine
,, 27	30·20	N.	...	119	68	56	53	59	Cloudy
,, 28	30·31	W.	...	117	75	52	53	57	Overcast
,, 29	30·30	N.W.	...	125	79	56	57	60	Fine
,, 30	30·35	E.	...	119	71	56	56	61	Fine
July 1	30·39	N.E.	...	117	70	54	54	57	Overcast
,, 2	30·31	N.E.	...	117	71	54	56	60	Cloudy

The following journals, magazines, &c., have been received:—Polyclinic, Transactions of the London Dermatological Society, British Journal of Inebriety, Medical Chronicle, Journal d'Urologie, Archives of Internal Medicine, Hospital Assistant (India), Journal of Nervous and Mental Disease, Surgery, Gynecology and Obstetrics, Journal of Laryngology, Rhinology, and Otology, Tropical Diseases Bulletin, Journal of the Royal Sanitary Institute, Magazine of the London (Royal Free Hospital) School of Medicine for Women, Quarterly Journal of Experimental Physiology, Bristol Medico-Chirurgical Journal, St. Bartholomew's Hospital Journal, Transvaal Medical Journal, &c.

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